GYMNASTIC TEACHING

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PREFACE.

For a number of years some of my friends had been asking me to write on the subject of Gymnastic Teaching, and finally Dr. J. H. McCurdy persuaded me to undertake the task. Like "Gymnastic Kinesiology" it was done, with the exception of the Appendix, in the form of monthly contributions to the PHYSICAL EDUCATION REVIEW during the past three years.

In this presentation I cannot claim to have added anything new to the subject. Nor have I tried to make an exposition of any particular system. It is merely an attempt to pick out and elucidate some of the principles underlying all gymnastic work and to show some of the possibilities of their varied application under different conditions. While some phases of the subject, such as the values and effects of the work, are still largely in the theory stage, the practical aspects of the work—methods and technique of teaching it, and the management of gymnastic material—have been abundantly tried and their effectiveness reasonably well proven. Indeed, the part of the discussion which deals with this side of the subject is but the summary of results of more than twenty years of study, observation and experience in teaching the work under fairly varied conditions—in the Y. M. C. A., in secondary schools, colleges and normal schools.

The book is offered to teachers and students of physical education with the hope that it may prove helpful in the adaptation of gymnastic work to all kinds of conditions, but especially with a view to meeting conditions in educational institutions. If it will contribute to a broader, more liberal point of view, to a greater interest in and more effective teaching of gymnastic work, and thus to a fuller realization of its potential values, the effort will not have been made in vain.

My grateful acknowledgment of helpful suggestions would include all the friends with whom I have been associated during the past twenty-two years. Among those who aroused my interest and guided me during my first years of teaching are Drs. J. H. McCurdy, C. J. Enebuske and L. Collin. In forming my point of view and general ideas on the subject I owe much to profitable discussion with these friends as well as Drs. L. H. Gulick, G. L. Meylan, C. W. Crampton, T. D. Wood, F. Leonard and others. In the systematizing and grading of apparatus work for men I received much help from Dr. G. L. Meylan, Mr. J. A. Davis and Mr. A. I. Prettyman while engaged in teaching the work at Columbia University. And to the stimulating, encouraging and steadying influence of Miss Amy Morris Homans I shall always attribute a large part of whatever success I may have attained in teaching the practical as well as theoretical side of the subject.

Wellesley, June, 1914.

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GYMNASTIC TEACHING

I. INTRODUCTION.

The principles of selection and systematizing, grading and progression of activities are fundamental in all education.

The complex conditions of modern civilized life necessitate the employment of a variety of means and an increasing amount of time in preparing the youth of the race to take their places in the community. The means used aim to produce in the average individual the greatest possible amount of adaptability to his environment, the greatest possible efficiency as a unit in the social structure. To attain this end it is not enough that he be sheltered and nurtured and have his bodily needs supplied, while growth and development—bodily, mental and moral (or social)—are left to "nature," that is, to haphazard contact with the environment. In most progressive countries such education is considered so inadequate that the law of the land compels the individual to submit to an artificial process, a kind of forcing process, intended to give him at least the rudiments of general knowledge and such intellectual and moral discipline as will enable him to become a safe and useful citizen.

In this educational process the agencies used are selected activities, adapted to the powers of the individual at any given stage of his development. These activities offer a certain amount of difficulty, at no time too great to be overcome, but so gauged to the individual's ability that success may only be attained through concentrated and persistent effort. In other words, the activities, besides being carefully selected and systematic, are graded and progressive. The haphazard, hit-or-miss principle of learning by blundering, unguided experience is too wasteful of time to be of use in this training process. The selection aims to be inclusive and varied enough to give full scope to all the growing powers of the individual. The ordering and progression of the subjects and the methods of teaching are such as to demand sustained and concentrated attention, careful observation, correct deduction and expression. In this way habits of logical thinking and rational action are promoted and the capacity for further growth insured.

In that part of the educational process which comes under the head of physical education, the same general purposes are aimed at. Here particular attention is paid to instruction in the care of the body, to the formation of ideals and habits of healthy living. Physical education also aims to make a definite contribution to the all-round training of the individual. It gives opportunity for and guidance in those bodily activities involving the large muscle groups, which are so essential for the proper growth and development of the somatic organs and of the bony and muscular systems, as well as of all the fundamental nerve centers and, indeed, of the whole central nervous system. Such neuro-muscular training is recognized as basal to all other training.

In physical education, as in all other departments of the educational scheme, the principle of selection is applied. Efforts are made to select those activities which promise the greatest returns in health and social training, harmonious bodily growth and development, increased neuro-muscular efficiency. Here, as everywhere, there is some diversity of opinion regarding the values which are most worth striving for, to the attainment of which the limited time and resources at our disposal should be devoted. Again, even when, in the main, there is agreement in this respect, there are different theories regarding the best means of securing these values: such as selection of the right activities, the details of management and methods which will produce the surest and quickest results. This diversity of theory and procedure is no doubt for the best, as out of it will probably be evolved, eventually (indeed is already being evolved), the underlying principles which should guide in the adaptation of the work to different conditions, groups and individuals.

The place of gymnastics in physical education. Diversity of theory conducive to growth, even though it lead to some confusion and ineffective teaching.

Of the activities employed in physical education gymnastics have offered, and still do offer, large scope for individual initiative and variation in the selection of material, in definition, in arrangement and in methods of teaching. Here, too, there is abundant need as well as opportunity for the evolution of fundamental principles. Most systems of gymnastics represent attempts to embody such fundamental principles. At any rate, they may be said to be traditional applications of certain principles, some of which may be fundamental and essential, others not. Because they are traditional, however—that is, associated with and the outgrowth of a certain set of conditions and circumstances—they are not necessarily suited to all other conditions. In each there

will be found valuable features—in subject matter, procedure or method—which may be readily adapted to and included in any scheme of work systematized with a view to meet new or special conditions. Thus, for example, the definite, clean-cut character of the exercises in Swedish gymnastics, the rhythmical continuity of German and Y. M. C. A. gymnastics, and much of the apparatus work in each, are features which will probably always be deemed desirable and made use of in any effort to organize and systematize gymnastic work to meet conditions in this country. A distinct American system of gymnastics may some day be evolved, but with our present political and educational organization that day seems as yet far off. In the meanwhile, each one must solve his or her own local problem by modification or adaptation of the principal types or systems of gymnastics as practiced and taught by their respective exponents. The emphasis on one feature or another will vary with the conditions to be met, and with individual judgment, predilection or bias.

In this effort to adapt gymnastic work to a variety of conditions there is bound to be some confusion of ideas, some clashing of conceptions and theories regarding selection and management of material, methods of teaching and procedure. Not infrequently more interest and energy is given to discussion and controversy about the theoretical aspects of these questions, than to their practical application in daily teaching and guidance of the pupils. This tends to lower the estimate placed on teaching ability and skill, to relegate the actual teaching to young and inexperienced teachers, and even to the neglect, or at least curtailment, of the practical preparation of teachers in the science and art of teaching. To resulting inefficient teaching is to be attributed, in a large measure, the lack of interest in gymnastic work which is too often apparent among older children and adolescents, as well as the lack of appreciation and recognition for such work on the part of school authorities. Such an attitude in turn reacts unfavorably on the teachers, tends to dampen their enthusiasm and compels them to resort to various devices to make the work attractive in a superficial way. This often involves a loss of time for honest, effective work, or else so thoroughly disguises the latter that there is little chance of its recognition. All such efforts, when carried too far, indicate a lack of conviction or strength on the part of the teacher, and tend to place gymnastics in the position of a pill, more or less bitter, that has to be taken as a *corrective* to the unfavorable influences of school life on posture.

While the right kind of gymnastic work undoubtedly does serve this corrective purpose better than any other agency, to

limit its application to this function alone, to deny its claim to a wider field of usefulness, is willfully to ignore the lessons of the past and the evidences of a more general effectiveness so obvious to any intelligent observer. Such a reactionary attitude toward the work is unfortunate and unwarranted. It tends to bring it into disfavor and to retard its development as a positive educational factor, capable of contributing an important part to the all-around training of the individual and deserving a recognized place in the educational curriculum. That it serves a broader and more constructive purpose than merely a corrective one, is admitted by an increasing number of educators, and is shown by the greater amount of time and credit allotted to it in educational institutions.

To justify the claims of gymnastics for recognition as an integral part of the school and college curriculum, it behooves the gymnastic teachers to make the work appreciated at its true worth by both pupils and school authorities. They must infuse into it an element of life and enthusiasm that will make it interesting and enjoyable to the pupils; enjoyable not as fun or play (except in the case of young children), but through the sense of exhilaration and satisfaction of doing something worth while, something which is immediately and permanently beneficial, which is beautiful, because vigorous, effective and well done, something in which a number of individuals work together in unison, each reacting on the other and each having a share in the success of the work as a whole. Educators must be convinced, by the results obtained, that gymnastic work is something more than corrective exercises; that its true function is to serve as a means of subjective motor education, in which posture education is included and emphasized; that it is capable of being used intensively and systematically, by procedure and methods suited to educational institutions and harmonizing with other educational material and methods as regards grading, progression, examinations, interest, incentive, and the permanent influence on the individual's development and personality.

The element of definiteness in gymnastics.

If the object of gymnastics is to be more than merely muscular exercise—either for the purpose of stimulating the physiological functions, or of producing local muscular development; if it is to be more than a form of amusement or a pretty show; if the work is to make good its claim to recognition as a positive educational factor, it should be of such a character as to require and train power of voluntary attention, a sharpened kinesthetic sense, the habit of quick and accurate response to motor stimuli. It

should offer and demand correct solution of definite motor problems, involving precision, speed, balance, quick and sure weight adjustment, rhythm. It should conduce to erect bearing by requiring a good posture in all exercises, and by including a number of exercises in which the muscles responsible for good posture are given vigorous and sustained work under varying difficulties, all with a view to increase the tone, endurance and localized control of these muscles, and to cultivate a good posture sense.

To accomplish these objects "gymnastic work must be selected, defined and taught in a way to focus attention, to exercise the discriminative and inhibitory powers and to elicit vigorous, clean-cut, well-adjusted motor reactions. To be capable of presentation to, and execution in unison by, a number of individuals, and in a manner to bring out their full effects, the exercises must be relatively simple, or at least capable of subdivision into simple elements, each of which may be presented and executed as a complete movement. These elements must be sharply defined in every detail, such as plane or direction, kind, extent and speed of movement; the parts of the body involved; the exact relation of these parts in the position reached by the movement; relative length of time spent in the movement and in holding position—rhythm.

"With this exactness of definition, there must be insistence on promptness, precision and unison in the execution. Whether the exercises are done singly on command, or repeated rhythmically, each movement or part (if compound or alternating) must be completed and the position marking its completion held an appreciable length of time, before the return, or the next part is begun. This involves checking momentum and overcoming inertia at every point, introduces the element of balance and redistribution of weight more frequently or more prominently, compels more complete, powerful and varied muscular action, and gives the pupil an opportunity to note and understand what he is doing, as well as the teacher a chance to help him, if necessary."*

This "definiteness" of gymnastic movements makes them in a sense artificial. Only rarely, in the lives of most of us, is there call for elementary, isolated movements of this kind. But, surely, concentration of attention and effort, exactness, completeness and speed of muscular contraction, and power of localizing movement are elements which enter into all skilled and efficient action and are therefore applicable to the ordinary movements of daily life.

Moreover, unless artificially "definite" in this way, gymnastic exercises, like ordinary movements, will tend to be done in lines of least resistance, in regions of the body where the movement

*Gymnastic Kinesiology, Wm. Skarstrom.

is easiest, by moderate contraction of many muscle groups—and those usually the strongest, best developed. Exercises in which this definiteness is lacking are apt to consist chiefly of acquired reflex coördinations, and do not compel the discriminating and inhibitory guidance of the higher motor centers involved in learning new combinations of muscular group actions. They therefore give very little opportunity for the refinement of motor control, for the opening up of new connections of motor associations, for increasing the power of muscular localization. Instead of improving they rather tend to confirm undesirable habits of movement and posture. Then, too, "indefinite" exercises are difficult to standardize in a way to enable the pupil to judge the result of his effort, or the teacher to express his criticism and to offer suggestion or assistance in an effectual manner. The tendency to distribute movement over wide areas, and so to save the complete and powerful contraction of circumscribed muscular groups, is unchecked. This tendency to save effort locally leads to habits of listless, cumbersome or slovenly movement (or at least makes improvement of such habits a difficult matter), and precludes proper development and localized control of the muscles.* The curtailment of the range of motion in the joints, or at least of certain kinds of motion, which is sure to occur sooner or later as age advances, is favored by this tendency to distribute movement. Gymnastic exercises of the "definite," localized type combat this tendency. By demanding strong contraction of all parts of the muscles and the full range of motion in the joints, they are conducive to completeness of muscular development, tend to increase the power of localizing movement as well as muscular contraction and to retard the gradual limitation of mobility.

From the foregoing it must not be inferred that all gymnastic exercises should conform in all respects to the above characterization of definite movements. Definiteness in the gymnastic sense does not fix a limit for the selection and combination of movements, although it undeniably leads to some restriction in these respects. It is rather a quality or style of execution which may be infused into any kind of exercise to a greater or less degree. Nor does it imply exclusion of movements of a general character, which by virtue of greater distribution of muscular action are particularly well suited to bring out the organic or physiological effects of exercise. On the contrary, the effort to retain the quality of definiteness as far as possible in such movements, especially as regards completeness, vigor, speed, etc., will enhance their value and increase their effectiveness in stimulat-

*The all-or-none theory of muscular contraction is of interest in this connection.

ing the great organs. Moreover, as rhythmical continuity is by no means incompatible with definiteness—if the exercises are properly taught—the majority of the exercises in a lesson, when done serially or rhythmically, may be made to contribute in a considerable degree to this general effect.

In attempting to describe a certain character and spirit of gymnastic work and to include it all in the rather inadequate term "definiteness," the customary setting forth and discussion of the aims and objects of gymnastics has been more or less incidental. (These will be restated and discussed in a later chapter, preliminary to the study of selection, classification and arrangement of exercises.) The division of the gymnastic lesson into groups of exercises representing, respectively, the corrective, educational and hygienic phases of gymnastics, should not be so prominent in the teacher's mind that, while striving for one kind of effects by one set of exercises, he allows himself to lose sight of the effects aimed at by the others. Rather it should be a question of emphasis. The mental attitude of the teacher in this respect is of considerable practical importance. It may make or mar the success of the lesson and of the whole work. But the thorough application of the principle of definiteness and the constant striving for a greater degree of it will more or less obscure any lines of demarcation and will tend to make every exercise effective in the several directions, though perhaps more in some than in others. At all events, the striving for definiteness, as an ideal in teaching, cannot fail to improve the quality and increase the effectiveness of gymnastic work.

The spirit of the work and the spirit of teaching.

Careful selection and clear definition of the exercises do not, in themselves, insure that definiteness of execution by the class which is necessary in order to produce the desired results. The arrangement and combination of movements in making up the lessons, rational progression from day to day, as well as technical skill in teaching and class management are at least equally important in getting the work done properly. Above all, the teacher's personality—his enthusiasm, vitality, strength of conviction and purpose, as expressed through the technical resources of the art of teaching, or through his influence in making the pupils apply what they learn in class to daily habits of movement and posture—will determine the degree of success of the work, here as everywhere.

To elicit the response and secure the coöperation necessary for effective work, the teacher must create a "spirit of the work," expressing itself in snappy and energetic action and cheerful alac-

rity. To make that spirit grow, he must imbue the pupils with his own enthusiasm and interest in the work, give them some idea of its main purpose, character and plan. Then demand, as a matter of course, the best efforts of which they are capable; insist, without nagging, that they do full justice to themselves and the work. Assume, in general, that any lapse, or failure to do good work, is due to a lack of understanding, either of a particular exercise, or of the spirit of the work. Make them feel that the teacher is not a taskmaster, but is working with them and for them.

To foster this spirit of coöperation, every teacher should give of himself freely, spend himself almost to the limit of his powers, be indefatigable in his interest in each individual. As his technical teaching skill increases he should not use it to save himself, but rather to get greater results from his efforts: better response, more vigorous and accurate execution of the exercises, deeper and more lasting impressions on the pupils. Then follow up the class teaching by admonitions, advice, help or encouragement outside of the classroom—in the examining room, in the office, on the gymnasium floor outside of class hours, in the dressing room, on the campus, yard or even street. Mingle with the pupils freely and try to get at their point of view. Enter into their interests. Satisfy their minds, as far as possible, on matters of administration and management as well as on subject matter, whenever there is frank, honest questioning or misapprehension. Do not keep aloof. Treat them as fair-minded beings and take them into your confidence as far as feasible. Meet them on terms of human equality at all times; make them feel that the classroom discipline and formal relations are merely devices necessary to facilitate instruction and make possible coöperative action in which each has an equal share. Such a spirit will always be appreciated by a class and insure the hearty support and willing coöperation of a majority of its members.

II. GENERAL PRINCIPLES.

1. Some Essentials for Successful Teaching.

The elements of strength and success of a teacher lie within himself rather than in external conditions and circumstances. They are dependent largely on inherent qualities which are not to be acquired by imitation of someone else, or by trying to live up to certain rules or formulas. Style, method, system, while of some importance, are not essential. Good results may be obtained in various ways, if fundamental principles are adhered to. While some successful teaching is achieved by untrained teachers who instinctively or by long experience have found and followed main principles, or who make up for lack of technical skill by enthusiasm, devotion, and energy, it must be admitted that a great deal of mediocre work is done which might be vastly improved if the teachers were better trained, not only in the sciences on which the work itself is based, but in the art of teaching it. Here, as everywhere else, there is the same difference between skilled and unskilled work, between crude if ever so honest efforts and finished workmanship. Even the born teacher, the natural genius, may profit and the quality of his work be improved by a study of principles and technique, with a view to making him a finished artist; while those who are more modestly equipped by nature may gain proficiency and facility by the same process.

Learning by practice and experience, while perhaps the most effective way, is not always sufficient. It is costly, severe, and often slow in its results. Many mistakes and trials may be avoided by understanding from the outset certain general principles which underlie all teaching and certain details of method and procedure peculiar to our own work. Proficiency is never attained without experience, but theoretical considerations and careful, intelligent observation may enable us to derive a larger measure of profit from our own experience, and to increase it considerably by turning to profitable account the experience of others.

Three things, then, are indispensable for complete success: 1. Natural aptitude and a strong personality. 2. A study of principles and methods with observation of their practical application. 3. Actual practice and experience in teaching. Any one or two without the other(s) will leave something to be desired; too great reliance on any one with neglect of the others will militate against the fullest measure of success.

Personality of the teacher. The first of these essentials includes the character, the living power, keen insight, resourcefulness, zeal, faithfulness, energy, enthusiasm, willingness to give of himself without stint—in short, all those qualities, ideals, and habits of the teacher which taken together make up his personality. These cannot be communicated or subjected to rules and definitions, being infinitely varied and subtle. The qualities which make one teacher successful may not be the same as those which make another equally strong and successful.

Perhaps in no other calling does personality play such an important rôle as in that of teaching. In most occupations the efficiency of the worker depends mainly on his special physical and mental qualifications, the dealings between people which are involved being related to material things. But with the teacher, as with the minister and physician, the working material itself is the human mind, and here the influence of personality finds its greatest scope. This is especially true in gymnastics because of the intimate relation and close association between teacher and pupils. Here, even more than anywhere, it is as much a question of what a man is, as what he does. Among the personal attributes which make for the success of a teacher are: Patience, cheerfulness, good temper; keen sense of humor, ready wit, a level head; sympathy, sense of justice, self-control, leadership; vitality and a fairly good physique; quick eye and ear and a good voice. Many of these, if existing in an undeveloped state, may be cultivated and made stronger by resolute desire and effort of will, and by creating as far as possible an environment favorable for their growth from within. Some of them may also be developed by formal training.

Knowledge of principles and methods. While the personality of the teacher—the sum total of his natural endowment, his education and general experience—is perhaps the most important single item on which successful work depends, his technical training and teaching skill constitute an almost equally essential part of his equipment. Such technical training should include a study of the main anatomical, physiological, and psychological facts on which the selection, definition, arrangement and progression of the work are based; a working knowledge of the general principles of all teaching, sufficient to an understanding of the little peculiarities of human nature that are constantly met and have to be reckoned with, serving to warn him against and enable him to avoid many pedagogical pitfalls and difficulties—faults of commission or omission which experience has shown to be conducive to ill success. Along with this general theoretical training should go a study and practice of the subject-matter to be taught, with a view to attaining at least moderate ability and skill as a performer,

and insuring an ample, varied, and accurate knowledge of the material. Familiarity with the subject-matter should be much wider than the exigencies of any particular class-teaching at any given time might require, so as to have a reserve for emergencies, to allow for leeway and loss in transmission, and in order to give the teacher a sense of security and confidence. It will enable him to meet unexpected contingencies, such as stating reasons for a given procedure, or the preference for one rather than another. Finally, the earnest and most painstaking efforts of every prospective or actual teacher should be given to a consideration of the devices by which instruction in this particular work is made effective, the methods used for accomplishing the results that the work stands for: the use of language, voice, demonstration, etc.; in short, the technique of teaching gymnastics.

That any special technical training is required, or, indeed, that there is any such thing as a special technique in teaching gymnastics, is hardly realized by the public or even by teachers of other subjects. This is not to be wondered at, considering that it is not so long since the chief qualification of a teacher was considered to be skill or reputation as a performer. Until recently very little emphasis has been given to the technique of teaching, even in normal courses. And this in spite of the fact, attested by teachers who have had other experience, that gymnastics is one of the most difficult subjects to teach, requiring as it does absolute attention, vigorous effort, and intelligent coöperation of all the pupils at the same time.

Although some crude teaching still passes muster—either because the public has not yet learned to judge the work critically, or because the supply of well-trained teachers has not yet caught up with the demand, or because, even when poorly taught, the work may still yield some obvious, beneficial results—nevertheless the demand for skilled teachers is growing and the standards of professional competence are rapidly advancing. In the normal schools more and more attention is given to courses on the principles and technique of teaching and greater facilities are offered for practice-teaching. To qualify as teachers or supervisors in public schools candidates are subjected to practical tests in teaching and criticism as a part of their examination. Other things being equal, the technically best equipped teachers gravitate toward the most desirable positions and so compel those less thoroughly trained to seek opportunities for study and improvement, as witness the large and constantly increasing attendance at summer schools and special courses. All these factors are making for greater efficiency in teaching, for greater effective-

In attempting to analyze the elements or factors which go toward making gymnastic teaching effective or the reverse, and which may be properly included in a study of the technique of teaching, we are at once confronted with the difficulty offered by the diversity of conditions under which the work is taught, the varying emphasis on the objects aimed at, and the consequent variations in the style or type of work called for. Rules of technique and method might lead to a stereotyped, lifeless style of teaching, a feeling that only one way is right and all others wrong. To discuss in a comprehensive and detailed manner all possible variations would be too great and difficult an undertaking. Not until we can foresee and provide for all possible conditions and discuss methods in the light of a wide experience of each of these conditions; not until we possess a complete knowledge of psychological and physiological laws, can final, adequate rules be formulated. Such a time will probably never come, nor would it be desirable, as that would imply limitation to personal initiative and growth. It will, therefore, be necessary to limit the discussion to certain topics or phases of the subject, each embodying a few principles and technical features which are applicable in greater or less degree to all kinds of work. Among such topics are the following: Control and class management; formations and the placing of the class on the floor; presentation and demonstration of exercises; admonitions and corrections; commands; the use of the active and relaxed position; combination and arrangement of exercises; progression. In connection with some of these a few variations in method or procedure will be considered and their respective advantages or disadvantages pointed out.

2. Control and Class Management.

Some means by which control may be maintained. Whatever may be the style of work taught, or the conditions under which the work is carried on, or its aims and objects, the prime requisite for successful teaching is that the teacher at all times have the class well in hand, be the undisputed leader and the master of every situation. Class control and management are at once the test and the result of the teacher's personality, his understanding of human nature, his ability to adjust himself to conditions as he finds them (or better yet, his ability to make conditions suit him) and his correct application of the principles underlying the work and the technique of its teaching. Control may sometimes be attained only after a struggle (of wits) in which the new teacher

is compelled by the class to prove his right to leadership. But even the best behaved class will, at the outset and from time to time, often in subtle and apparently innocent ways, put the teacher to the test, and if the latter fails to measure up to the proper standard, if he is found wanting in those qualities which may be expressed by the term power of command, the class will gradually, but inevitably, drift away from habits of order, discipline and good work to slackness, disorder, and mischief. Or the interest in the work may fail either to materialize at all, or, if existing at first, to be sustained.

How to secure and maintain control is a question the full answer to which cannot be given, at least briefly, as it involves everything: personality of the teacher; interest of the class in the work, aroused and sustained by proper adaptation, progression and presentation of the work to the class; the degree to which the teacher is able to appeal to the various motives and incentives of the class or individual members of it; the teacher's will power and vitality generally, and at any given lesson; his ability to "get in touch" with the class, to establish and maintain the right personal relations; his attention to all the technical details of teaching.

Incentives. Some teachers control largely by "exercising their authority," by virtue of the awe or fear they inspire, by constantly holding the whip of compulsion over their pupils. This form of appeal is the lowest and should never be resorted to, except once in a while in the case of refractory individuals after all other means have failed. Other teachers control their classes through the respect and affection they are able to inspire, by imbuing their pupils with a desire to do their best in order to please the teacher and gain his approbation; others again because they are able to arouse the sense of duty in their pupils, inducing them to try to do the work well because it is worth doing, or simply because it is a part of their obligation to the institution; or by appealing to intelligent self-interest, to a commendable desire to derive the greatest possible benefit from the work; still others chiefly by communicating to their pupils their own enthusiasm and interest in the work. All these avenues of appeal, except the first, are useful and legitimate means of maintaining control, and the most successful teachers are those who know how to play upon these different motives and incentives of the class most skillfully, in the right proportion and at the proper time.

Will power. One of the essentials in getting and keeping control of a class is a strong, well-trained will and a positive, determined mental attitude on the part of the teacher. Even when the conditions under which he is working are in the main favorable, he usually has to overcome the natural inertia, the disinclination

to vigorous mental and bodily exertion on the part of the class (and often of himself). This is particularly apt to be the case in the beginning of the lesson, at the first "plunge" into the work, before the class has become "warmed up" to it. But it is also true to an almost equal extent throughout the lesson. To make every member of the class execute each movement in the best possible manner, in a way to accomplish the purpose for which it is given, in perfect unison, with the utmost effort and painstaking care, whether at the time agreeable or not, requires a combination and interplay of will power between the teacher and the class which taxes the strength and tests the mettle of both. Such combined exercise of the wills of the leader and the group, the leader furnishing the initiative, the impetus and the stimulation, is the essential feature of all coöperative action. It does not mean slavish obedience, the subjection of the pupil's will to that of the teacher, but rather the guidance of the former by the latter in the accomplishment of some definite object. The work, the duty, or the cause is the real driving power of both the leader and the group. In this sense obedience—willing coöperation on the part of the pupil—is really induced exercise of the pupil's will and may justly be considered effective in training of the will. At any rate, coöperative action of this sort, produced in the first place by the exercise of the teacher's will, and comprising as it does both positive effort and inhibition of undesirable action, cannot fail to inculcate habits of obedience to law and constituted authority, to the self-restrictions imposed by an intelligent and worthy plan of life, and to the suggestions or guidance of a chosen leader. All these forms of obedience are necessary in any true democracy, and must be rendered by every good citizen. "The habit of obedience to law, of bringing our actions into harmony with it, is one of the first conditions of an orderly and well-disciplined life. . . . . Obedience is a habit and must be learned like any other habit, by practice." (J. G. Fitch.)

The degree of obedience or willing coöperation on the part of the class will then be the measure, for one thing, of the teacher's will power. This in turn is expressed through his self-control, his strength of purpose, and his ability to liberate energy. It will vary with his physical condition, with his mental state, his ideals, and temperament. Undue fatigue, emotional disturbance, even atmospheric conditions may blunt the keen edge of his will power and be reflected by slackness or poor quality of work on the part of the class. Will power in the teacher will show itself among other things by his self-possession, by a firm, decided, animated attitude, manner, tone of voice; the lack of it by a nervous, irritated, or uncertain manner, hesitation in voice and bearing, aimless movements, superfluous speech, nervous mannerisms, etc.

A quiet but determined manner, an air of expecting to be listened to and obeyed as a matter of course, being an expression of the real feeling that such is the case, will go a great way toward securing that willing obedience which is the first requisite to coöperation. On the other hand, "obedience cannot be gained by demanding it (in words or by gestures which are supposed to be manifestations of will power), or by explaining its usefulness, or by entreaty, or by threat—all these are signs of weakness and lack of will power." (Fitch.)

Interest: Getting and keeping in touch with the class. Class control is very much dependent on the interest of the pupils in the work. When this is lacking, control can only be maintained through "the exercise of authority" in an undesirable way. Interest in turn depends on the proper adaptation, character, planning, progression, and presentation of the work. It also indicates the teacher's ability to get in touch with the class, to establish and maintain the right mental relations, to infuse into the class his own interest in the work. While the teacher's personality is a large factor in this as in everything, a judicious "introduction" of the work to the class is of great help. A certain amount of explanation by the teacher of the nature, plan, and purpose of the work is always possible and should be given at the first meeting of the class. The form and comprehensiveness of such a preliminary statement will vary with the age of the pupils, their probable attitude toward the work, and the conditions under which it is carried on. At such a time, after having stated briefly and clearly the objects of the work as he conceives them and what kind of work in his judgment will best attain these objects, the teacher may in a straightforward, simple way ask the pupils to give him their cheerful coöperation in his efforts to organize the class and to drill it in those details which are necessary to enable him to handle it like a well-adjusted machine. He may appeal to the "group spirit" by pointing out the necessity of each member doing his best in order to insure unison, good quality, and finish to the work of the class as a whole. He may suggest the advantage of going slowly in the beginning so as to master fundamental details before attempting more rapid and complex work, with a view to progressing farther and faster in the long run. In conclusion, he may show the importance of starting and finishing all exercises in a good fundamental position. Then begin the lesson by practicing this is an exercise in response to the command *"Attention!"* and in a way to make the contrast between this fundamental and the relaxed position as striking as possible.

When physical examinations are made before the work begins, the teacher has a good opportunity to arouse the individual pupil's interest by pointing out his needs for improvement and by

giving him a general idea of the kind of work which will best accomplish this. Here he can show him how to stand and walk erect and urge him to practice this as a special exercise until he can do it with ease and almost unconsciously. He can also emphasize the importance of maintaining this forced erect carriage throughout all individual and class exercises, and urge the advantage of doing each exercise with the utmost accuracy and power.

The extent to which the teacher can in this way prepare the minds of the pupils and enlist their coöperation beforehand will determine the character of the work and the method of teaching, at least in the beginning. If the age and intelligence of the class and its serious interest in the work warrant it, he may, for example, find it feasible and wise to drill on fundamental details to demand quick response to commands and a fair degree of precision and unison in the execution of a few simple movements at the first lesson, even if the continuity and quantity of the muscular work have to be sacrificed for the time being. If, on the other hand, the class is of an age or mental attitude in which that kind of a lesson would fail to be appreciated and arouse interest, because its purpose could not be readily understood, it would be wiser to spend less time on details, to use the more indefinite types of exercise and at once to strive for continuity, swing and go. Such work would be more likely to catch and hold the attention of the pupils, to call forth their most vigorous, even if crude efforts, and to produce the immediate and obvious organic effects which they are capable of appreciating. In most cases it will probably be best to mix the two kinds of work in varying proportions. If this is done judiciously, beginning and ending the lesson with lively exercises, the teacher will at once get in touch with the class, there will be no slackening of interest and therefore no danger of loss of control.

3. Discipline and Attention.

Discipline. Among the most fundamental and obvious elements or expressions of control are orderly behavior, decorum, obedience and attention to duty—collectively included in the term discipline. This term also implies inhibition and repression, as well as measures producing these. Poor discipline in teaching means imperfect control and slovenly, ineffective work.

With favorable conditions, such as good morale and traditions of the institution, a recognized standing and good backing of the work, and the right relations between teacher and class, discipline is rarely a problem. Good discipline is then a matter of course, the natural, normal condition of things. It is insured

and maintained by giving the class abundant work requiring the constant exercise of the mental and bodily powers of the pupils, and of such a character as to arouse and keep their interest. Then it needs no mention or sign of conscious management on the part of the teacher. And yet, the maintenance of such a desirable state of things requires his thoughtful consideration and watchfulness, his constant self-control, ready resourcefulness and good judgment. There will always arise occasions, even in well-behaved classes, when something occurs which, if not properly met, might lead to a breach of discipline and at least temporary loss of control. It may be some little slackness in the beginning of a lesson, insufficient alacrity, some thoughtlessness or excessive high spirits on the part of one or a few pupils, of no great harm or consequence in itself, but apt to lead to other things or to be "catching." All such little deviations from good order and discipline, especially such as are out of keeping with the spirit of the work, must not be allowed to pass without notice, lest they grow and multiply. A word, or even a look, not necessarily severe but sufficient to indicate that the incident has been observed and disapproved, may be sufficient. If any considerable number have been guilty, a few words of censure to the class as a whole, spoken calmly and without any show of personal annoyance or resentment, may be advisable, especially if the pupils are very young. If really flagrant breaches of discipline should occur, more vigorous measures may be necessary, such as sharp reproof of individuals before the class, the imposition of a suitable penalty in keeping with the customs of the institution, loss of privileges and even exclusion from the class for the time being. Perhaps the best and most effective way in such cases is to ask the offending pupil to see the teacher after class. Then the matter can be talked over quietly, the reasons for and the circumstances leading up to the offense inquired into, and the right kind of appeal or pressure be brought to bear. In this way a deeper and more lasting impression is made and repetitions are less likely to occur. The moral effect on the rest of the class is also considerable.

If a whole class show a spirit of mischief or antagonism to a new teacher, he can in most cases conquer it by a fearless and apparently unconcerned manner on noting the first signs; then, perhaps, by reprimanding one or two in quiet tone, but with a look and manner conveying the impression of unlimited reserve power, of perfect understanding of the situation and ability to deal with it. In the meanwhile he may decide in his own mind what to do in case of further trouble; then, if it seems unavoidable, make the issue in a few well chosen words, and "land hard" on the first offenders, using whatever legitimate means he has

at his command. If possible, meet the issue smilingly, but in any case with firmness and determination. Above all, give no sign of being disconcerted or irritated, as that is exactly what a mischievous class desires. When a class finds that a teacher is fearless and cool, seems to know his business and to understand the mental workings of the group and of every individual, it soon settles down to a business-like attitude. When two or more individuals habitually incite each other to mischief or inattention, separation may be all that is necessary.

Under all circumstances, it is essential that the teacher keep his temper and administer reproof or punishment in a manner free from any suggestion of personal animosity. While a show of righteous indignation or even wrath may on rare occasions be justifiable, and very effective, it is safest to avoid any explosive reaction, any violent collision with individuals or class. It is always desirable to control by gentle means as far as possible and to keep the idea of compulsion by severe measures in the remote background. Make the pupils feel that you take for granted obedience and good behavior on their part and treat any small lapse with surprise and disappointment. Do not be too quick to make a rule or a threat, especially if enforcement or fulfilment would be difficult. But if for any reason compelled to make the issue squarely, then stick to it to the bitter end (providing you are in the right), no matter what trouble or discomfort may grow out of it—to yourself as well as to the pupils.

The manner of showing disapproval is of great importance. This applies to the execution of an exercise as well as to the general behavior of the class. Reproof, reproach or punishment of any kind is a matter requiring much pedagogical tact and judgment. Whenever possible without spoiling the result, inject a little humor into the situation. This is often more effective than sternness, especially in minor matters. It gives the class the feeling that the teacher can easily handle any situation, has plenty of reserve power, does not criticise or censure from a spirit of pedantry or fussiness and does not take himself too seriously. But be sure that the humor is of a kindly nature and spontaneous. Avoid sarcasm of a biting, and especially of a sneering kind. It is sure to be resented, as it always means that the teacher is taking advantage of his position in an unfair way.

Knowing when and how to express disapproval or mete out punishment, and above all, not overdoing it, is one of the chief factors of success in maintaining discipline and at the same time keeping on good terms with the class. Another is to furnish an abundance of hard, but interesting work. No general rules can be laid down, except that of being just and impersonal. Assuming as far as possible that minor infractions are unintentional lapses,

due to momentary forgetfulness or inability promptly to change from a state of playful excitement or inertia to one of serious attention and alacrity, rather than to willful desire to annoy or reluctance to work, and treating them as such, will usually be the best way. But guard against letting the class think that even little things can pass unnoticed or will be accepted—that the teacher is "easy." "Nip things in the bud!" Always show gentle but firm and unmistakable disapproval of the least breach of discipline, slackness, mind wandering or whatever the case may be, and so make the possibility of really serious trouble increasingly remote and out of the question.

Attention. If discipline may be said to represent the negative side of class control, the ability to secure and maintain attention constitutes its positive or active phase. Discipline implies inhibition or repression of impulses and actions subversive of good order and the right conditions for work. Attention—in the ordinary sense, and also including all that is implied in such terms as alertness, alacrity, response, readiness and willingness to think and to do—is an essential feature of the work itself. Lacking this positive, controlled, fixed and willingly given attention, the work is but a sorry spectacle, devoid of life and interest, perfunctory, listless and of doubtful value, even though there be perfect decorum and a kind of submissive, passive "pseudo"-attention. When active attention has been established and every individual is ready and willing to work, understands what to do and how to go about it, there will be no need for repressive measures, no call for the exercise of authority to maintain discipline. This is but the application of the common principle of forestalling and inhibiting undesirable action by inducing right action, of diverting aimless, useless or mischievous impulses and energy into useful channels, into purposeful activity. It will readily be seen that not only control but the success of the work from all points of view hinge on the teacher's ability to stimulate and hold this active, directed, fixed attention. How to focus the mental processes of a number of mind-wandering, indifferent, inert and perhaps even antagonistic individuals, or a lot of excited, rollicking, contending, play-fighting, wildly shouting young savages, as the case may be, upon the serious, orderly, formal work in hand; how to keep these various minds steadily and unswervingly applied to definite, discriminating, vigorous efforts, the purpose of which may be only vaguely understood and the incentive for which is at best distant and more or less abstract, is often a task of considerable magnitude and difficulty. It taxes the vitality, the strength of will, the natural and trained powers of leadership of the teacher and all the technical resources of the art of teaching. Indeed, this is the very essence of the art of teaching.

While it would be futile to attempt to enumerate and describe all the factors which enter into this problem, all the means which may be legitimately used to secure, stimulate and hold attention, or the mistakes which lead to a loss of it, a few suggestions at this time may be appropriate and helpful as having a bearing on class control. In the detailed discussion of the technique of teaching, later, the subject of attention will be often referred to and always borne in mind.

The beginning of the lesson is usually the most difficult and critical time in all respects. Especially is this true when the pupils enter the gymnasium in an informal manner and are allowed to run around and amuse themselves in any way they choose for a varying length of time before the lesson. When control becomes difficult on this account, it may be feasible and wise to curtail their free use of the place to some extent, as in the use of apparatus, balls, etc. But even so, it will hardly be possible or wise entirely to curb youthful spirits by negative means —restriction, repression, interdiction. It would be better not to allow them on the floor at all before the lesson, but to keep them in the dressing room or hall until all are ready, and then to march them in in good order. This is done in many schools. On the other hand, when a fairly long time is allowed between periods, it becomes a question of whether it is not better to let them romp and play on the gymnasium floor rather than to try to keep them quiet and orderly in a crowded and often poorly ventilated dressing room. The former is probably preferable and in many places other than schools may be the only feasible way. In such cases it will usually take a little time and several steps to get the class lined up and ready for work.

It would be unreasonable to expect an instantaneous change from the varying mental states of hilarity, excitement or inertia to one of quiet but alert attention. Often the teacher's voice may not be adequate to arrest and change the condition of things. A bell or a whistle may be necessary as a preliminary signal. A class may be trained to subside into quiet and even silence on this signal, and then to form promptly on the command "Fall in!" or "Line up!" Or this may be done without any special command. In any case, it will be worth while to drill a class in prompt response to whatever signal is given, and to line up in some agreed-upon manner with the utmost alacrity. Try to stimulate their pride and spirit of emulation in this respect; make each individual feel responsible and loth to be the last, or the cause of delayed and poor alignment. It is wise to allow a little time for this preliminary formation before calling the class to attention by the formal command. It paves the way for and insures a more perfect response to the first command *"Attention!"* But make con-

stant efforts to shorten this time. With young pupils, and occasionally with older, actually timing this manœuver may prove a good stimulus. Even ordering a class, when the first attempt has been unsatisfactory, to break ranks, scatter and try it again, may be effective in the beginning, or later when there is sign of slackness. But this expedient might not be safe if used too often, or with classes difficult to handle.

Having in an informal way got the class under partial control and arranged in an approximately correct formation on the floor, try to get silence and readiness for the real beginning of the lesson by standing still before the class, running the eye along the lines and indicating by look, bodily attitude, slight gesture or even a brief admonition, that something is about to happen; then command *"Attention!"* in the most effective voice and manner possible. This does not mean in a loud voice, necessarily. It may be done that way, or more quietly, but always in a tone and with a manner indicating force of will, energy and reserve power, as well as expectancy to be obeyed instantly and absolutely. At the same time there ought not to be too strong a suggestion of masterfulness in a personal way. Rather try to convey the idea of something more than that, of a motive power which is compelling and binding on teacher and pupils alike, namely the duty, the work which both are to accomplish. This applies to the giving of all commands. To convey this idea more clearly (without saying anything about it) and at the same time to help, by suggestion, to get a satisfactory response to the command *"Attention!"* it is well for the teacher himself to respond to his own command with the utmost vigor, by assuming the fundamental gymnastic position suddenly, and retaining it rigidly for a moment before proceeding further. If the response of the class is not satisfactory, if it is lacking in promptness and does not show a marked contrast to the position of ease, then give *"In place rest!"* and repeat, having first made an admonition, if necessary. After a moment's immobility and perfect silence, proceed briskly with the next step in the lesson—usually the alignment. Or, if there are any announcements or special statements to make, do so at this time. But first give *"In place rest!"* then begin to speak immediately after this command has been properly responded to. This procedure insures their attentiveness while relieving them from the strain of holding the fundamental position for a considerable length of time. On the other hand, it avoids an inevitable lapse from the fundamental position, due to fatigue or forgetfulness, which is very undesirable from a pedagogical standpoint. Whenever during the lesson there is an intermission or lengthy explanation, the class should be formally relieved from the fundamental

position and allowed to stand at ease, though not relaxed to such an extent as to mean slouching or poor posture.

Very often control is lost, in a small way at least, by failing to check the tendency of most pupils to try to adjust their places in the line after attention has been called. It usually represents good intention, perhaps a mistaken idea of what is wanted, an imperfect understanding of the significance of the command *"Attention!"* or at worst a belated attempt to do something which should have been done before. In any case, it is obvious that the command has failed to produce the desired effect, and such failure should not be accepted or countenanced. The acceptance of every such failure, no matter what the reason, weakens the teacher's power of command and class control, as well as the pupils' habit of active, concentrated attention. In this particular case it also tends to confusion of ideas. Make the distinction between the commands *"Attention!"* and *"Right dress!"* clear, and insist that each be responded to in the right way and at the right time.

When speaking to the class, either for the purpose of instruction, description of an exercise, comment or admonition regarding its execution, or on any other matter, it is important that the teacher stand in a place and at a distance from which he can be heard and preferably seen by all. He should face the class and keep his eye on all parts of it. A platform may be useful for this purpose but is not always necessary or even convenient. Be sure that voice and enunciation are such that the pupils farthest away are reached. Guard against the not uncommon, usually unconscious, mistake of addressing those standing nearest.

Do not begin to speak until all are quiet and attending. If inadvertently failing to wait, or if a few pupils become inattentive, and especially if any one speaks or otherwise disturbs the absolute quiet, stop immediately and abruptly, in the middle of a sentence preferably. Then by look, gesture or quiet verbal reminder, gain or restore complete attention. Do not resort to vehement demands for silence and attention or show any signs of irritation. If reproof seems necessary, administer it in a calm, self-controlled manner, then resume speaking as if nothing had happened. Occasionally it may be necessary to command *"Attention!"* and then give *"In place rest!"* as described above. If the teacher goes on speaking and accepts inattention and even conversation from a part of the class, this part will grow larger and larger, and soon the majority will feel that strict attention is not expected. This is one of the most common ways in which the teacher's hold on the class is weakened. Moreover, the pupils are encouraged to form habits of discourtesy and disrespect.

Interest in the work is an essential factor in securing and holding attention. To arouse and sustain interest, the work must be adapted to the needs and abilities of the class. It must meet in the first place those needs of which the pupils are aware: the needs for exercise, for bodily action which will produce the immediate organic effects and the exhilaration or sense of well-being associated with it. The work should also be of such a character that it tests and makes full use of the various abilities already possessed by the class, as regards strength, agility and skill, and at the same time is most conducive to perceptible improvement in these directions. On the other hand, it must be simple enough to enable the average pupil to do it reasonably well, thus giving him a sense of satisfaction and encouragement. The proper selection, grading and adaptation of the work must be backed up with good presentation, animated, inspiring, technically correct teaching and rational progression. The class must be made aware of progress in some way. It is well, for example, when introducing a new type of exercise, or a new combination, to indicate by a few words its purpose, its relation to similar exercises with which the class is familiar—wherein it differs, what constitutes the increased difficulty, or its particular effectiveness, what final form or type it leads up to, etc.

Having aroused the interest and gained the confidence of the pupils, the teacher can gradually modify their mental attitude toward the work, lead them on to different and broader points of view, indicate needs of which they were not aware at first, and arouse interest in work suited to those needs. This enables the teacher to appeal to motives and furnish incentives which previously would not have been available or effective. Also he can make the pupils appreciate phases of the work which require a certain amount of progress and training to be understood and valued. Thus a skillful teacher may continually open up new and varied lines of interest, stimulate a constantly increasing appreciation of the value and beauty of the work and so secure the attention and willing coöperation of the class.

The technical side of teaching also plays an important rôle in maintaining attention throughout the lesson. The teacher must have facility and be sure of himself in such technical matters as the presentation of exercises, the giving of commands to start and stop movements or to handle the class generally. He should know how to describe and demonstrate the exercises in a lucid, concise way, with as little loss of time as is consistent with clearness and vividness. The commands should be suitable, simple and self-explanatory as far as possible; properly intoned and inflected, carrying a strong suggestion of how the movement should be done; with sufficient pause between the preparatory and final parts

to insure perfect unison in the execution. When the exercises are done rhythmically, he must be able to keep the class together, "head off" an impending break of unison, guide and modify the rhythm in a way to elicit snap, speed, accuracy and steadiness of movement and keep it from becoming mechanical, oscillatory, slovenly or listless. He must at all times be ready and willing to exert himself to the utmost and be able to keep a clear head while trying to do several things at the same time: stimulating, admonishing, warning and correcting in a general way, constantly moving about between the lines or in front of different portions of the class, observing everything in a systematic way, helping by example, word or touch first one individual or group, then another; all the while keeping his eye and ear on the class as a whole, marking the time, steadying the rhythm and from time to time vigorously participating in the movement in order to stimulate, through suggestion and example, to greater effort and attention to details in its execution.

Special ways of stimulating a class. Dullness and poor response, restlessness and inattention, are usually traceable to the non-observance by the teacher of pedagogical principles and technical details of teaching, or else to some shortcoming or peculiarity in his physical make-up or manner. But these things may occasionally be due to entirely extraneous causes, such as cold, or humid, sultry weather, "spring fever," insufficient light, the effects of a vacation just ended or impending, excitement about something that has happened or is going to happen outside of the class, and having nothing whatever to do with the class, the teacher or the work. At such times the teacher is often at a loss what to do to get in touch with the class, how to secure its attention, create the right mental attitude and elicit the snap and vigor he usually obtains. Unless he sizes up the situation correctly, he is apt to lose patience or presence of mind, become irritated, annoyed, do the wrong thing and thus make matters worse.

Under such circumstances various expedients to stimulate interest may be tried. The class may perhaps be rallied by greater effort than usual on the part of the teacher to infuse animation into the work through his own manner, voice and movements—by liberating some of his reserve energy and taking active part in the exercises.

Or the attention may be focused by drilling the class in stopping rhythmical movements in any intermediate position without much or any warning and time allowance, providing such demand is not unreasonable.

Similar effect may be obtained by quick changes of position in response to command, or some lively marching involving

rapid changes of direction, but not requiring any lengthy explanations or teaching of new elements. Such work, if not carried to the point of confusion, may serve to put the pupils on their mettle by making those who are inattentive conspicuous and perhaps a little ludicrous.

The spirit of emulation and rivalry may also be stimulated by judicious comparisons with the work of other classes in the institution. Such comparisons, however, must be expressed in a tactful way, either humorously or seriously. In the latter case they may even be carried to the point of actual competition.

Another expedient, which may prove effective, is to start the lesson in a way strikingly different from the customary order. For example, a short run, or running with various kinds of steps, or combined with arm and body movements. This works well on a cold day. Or let the class do some lively passing of the medicine ball, using as many balls as possible and rather short distances.

At times it may be advisable to change the character of the lesson, to give simple, indefinite exercises that can be done without too much attention to detail, but with considerable vim and continuity. Mimetic exercises of a not too complicated character, or familiar to the class, are often suitable at such times. In the case of young children, such exercises may represent various natural activities of man or characteristic movements of animals. For older children, and especially for boys, movements occurring in or representing striking features of games and sports are suitable. In all such mimetic exercises the interest is secured or reënforced by enlisting the pupils' imagination.

With classes of young children a teacher may occasionally arouse lively interest and give much innocent pleasure to the children by letting them take turns in giving exercises to the class. This is, of course, really a modification of the game "Follow the leader," but the children probably do not think of it in that way.

In any class whatever, the substitution of a game for a part or the whole of a lesson that threatens to be a failure is almost invariably satisfactory. But it must be a game that is familiar or easily organized, and in which every one has a chance, or rather is compelled, to be active, both mentally and physically. In such a game the teacher should, if possible, take part with genuine animation and enthusiasm.

Finally, if none of these or similar expedients are feasible for any reason, or if some of those first mentioned are ineffective, the only alternative is to accept the situation as cheerfully and patiently as possible. Let the class know that you are aware

of the probable cause, and treat the situation good-naturedly or humorously, as the case may be, taking the attitude that after all it is only a temporary condition and will be made up for next time.

4. Energetic Leadership and Friendly Relations.

The influence of suggestion and example. The teacher's mental state and physical condition, as shown in his manner and appearance before the class, greatly influence the quality of the work, the atmosphere and tone, and therefore the degree of success of the lesson. The class quickly senses and accurately reflects any temporary or habitual condition of low vitality, any sign of depression or overfatigue on the part of the teacher. Both the teacher and class have "off days" and not infrequently these coincide, sometimes when least expected. Occasionally the cause of such coincidence may be perfectly obvious, such as atmospheric conditions, external disturbance, etc.; but more often it can be explained only by attributing it to the unconscious reaction of the teacher on the class and *vice versa.* The potency of suggestion, for good or ill, is always to be reckoned with and should be constantly borne in mind. It is largely through the suggestive power of example that the right spirit of the work is created and sustained.

Appearing before the class irritated, nervous and disturbed, or dull, absent-minded and careless, will invariably lead to unsteadiness, inattention, slackness or listlessness on the part of the class, and so will weaken the teacher's control. On the other hand, a brisk, energetic, business-like manner acts like a stimulus and tends to produce a like mental state in the pupils.

Vigorous participation by the teacher in the exercises has a similar effect. It is always helpful in suggesting the proper speed of a movement, steadiness in retaining each intermediate position, sureness in the rhythm. It may sometimes succeed in rousing a class to spirited action when other means of stimulation have proved unavailing. Indeed, it is one of the most common expedients and the chief resource of many teachers in their endeavor to put life and enthusiasm into a lesson.

Like all good things, however, this participation in the work may be overdone. If indulged in too freely (and to teachers with abundant vitality the temptation to do so is often strong), it tends to lose its effectiveness for the purpose of stimulation as the class becomes accustomed to it. Also, it is liable to limit the teacher's chances and defeat his efforts to obtain a good quality of work in other respects than those of continuity, swing

and go. For if the teacher remains most of the time in one place, strenuously going through all the exercises with the class while counting to keep time, he does so at the expense and to the neglect of other important phases and duties of teaching. He is bound to fall short in systematic and critical observation of the work of all the pupils, in careful attention to details of execution, in individual, stimulation and correction. In the nature of things he has neither breath nor opportunity for anything more than very brief, general admonitions and a "whoop-it-up" kind of stimulation. This sometimes takes the form of an extravagant speeding up of the rhythm coupled with numerous repetitions of the same movement, and may be carried to such an extreme that all semblance to definiteness and even unison in execution is lost. At such times it is not unusual to see one after another of the members of the class discontinuing the exercise from sheer breathlessness and local fatigue, until only the teacher and a small portion of the class are working. Only rarely is such a procedure justifiable, and in the long run it will militate against the best interests of the work as well as the teacher.

One other objection may be urged against habitual or excessive execution of the exercises by the teacher. If the class is constantly carried along by the teacher in this way the work becomes too nearly imitative, amounting often to nothing more than reflex action. The pupils are given less opportunity to think and act for themselves, to execute *voluntary* movements in the true sense. They come to depend too much on the teacher's movements and too little on their own initative. They are given an apparent short-cut to their solving of motor problems and even then, as likely as not, they fail to get the correct solution.

In view of the drawbacks inherent in this style of teaching, and sometimes on other, less valid grounds (such as inability to do the movements well, disinclination to vigorous bodily exertion, failure to dress appropriately, etc.), many teachers refrain entirely from participation in the exercises. In so doing they deprive themselves and the class of a valuable help in teaching and a legitimate means of stimulation. It is unquestionably an advantage to a teacher to be able and prepared at any time, and especially in the beginning of a lesson or the starting of an exercise, to throw himself into the movement with abounding energy, executing it with more power and "finish" than any member of the class. But the wise teacher will not do it too much and, above all, not in a routine way.

Good results may also be obtained by applying this principle in a slightly different way. Put the suggestion of snap and

effort into the voice when giving the commands or while guiding the rhythm, and also by bodily attitude, gesture and even facial expression (unconscious of course), when making general admonitions and correction. By thus working with and for the class with mind and body, by word, cues and other forms of suggestion, if not by detailed execution of all the movements, the teacher can not only elicit the most vigorous action from the class, but also arouse the spirit of emulation, and establish the sympathetic relations without which cheerful coöperation cannot be expected. The cold, formal way of teaching, merely giving commands interspersed with routine, stereotyped instruction, sharp, peremptory corrections or warnings and trite, timeworn admonitions, will soon deaden interest and enjoyment in the work and make it lifeless and perfunctory. It puts the teacher in the rôle of a taskmaster, and is incompatible with the true spirit of the work.

Personal relations between teacher and class. Most teachers probably aspire to be popular with their pupils. Such a desire is commendable, providing the popularity is of the right kind. It should be based on respect and affection for the teacher's personality combined with a serious and intelligent appreciation of his professional attainments, namely, the effectiveness of his work and his skill in teaching it in such a way as to make it interesting. A teacher may sometimes be popular by virtue of some natural advantage of appearance, charm of manner, social qualities, or commanding presence. But unless he can make such personal attributes count in his teaching, can offer his pupils the kind of work adapted to their needs and abilities, can present such work and get it done in a way to serve the best interests of all the pupils, his popularity is of a shallow kind. It is apt to wane in the long run, or to be confined to a limited number. Almost any teacher with an attractive personality, or with a predilection for and skill in some particular phase of the work, can get a personal popularity or following of this limited kind, and for a time achieve a certain kind of success. But it is not the genuine kind unless the results of the work are what they ought to be.

Whatever the natural advantages of a teacher may be, if he have force of character and the spirit of teaching, combined with a thorough knowledge of the subject, he may command the esteem, respect and in due time even the affection of his pupils through their appreciation of his work, by the justice or "squareness" of his dealing with them, and by the genuine, sympathetic interest he takes in their welfare. Nor need he fear that a firm insistence on order and discipline, attention and vigorous effort

will detract from his popularity. Quite the contrary. The more he can imbue them with a sense of the value and beauty of a strict, business-like atmosphere in the classroom; the stronger his will power—in the sense of proceeding undeviatingly to a desired end and bringing the pupils along with him, demanding their best and accepting nothing less—the more they will respect and appreciate him and the work. But this will power must be of the lasting kind. It must be guided and tempered by reasonableness, patience and sympathy. A part of the teacher's business is to know how much he can expect from a class, both in the way of work and behavior. He must bear patiently with the shortcomings, understand and gauge the ability, the effort and the possibilities of the class and its individual members. To combine encouragement with stimulation and prodding; to condone while administering rebuke, to correct and admonish in a spirit of helpfulness—in short, to work and deal with his pupils in a sympathetic, friendly way, to the best of his knowledge and ability, is the surest way to control a class and at the same time to secure and retain its good will.

A due respect for the sense of justice and the feelings of the class and of its individual members is essential to friendly relations and the right spirit of coöperation. Do not annoy or harass a class by unjust scolding and nagging. Refrain from excessive repetition of certain movements in order to eliminate non-essential faults, or in order to correct and rebuke a few individuals. A little of this kind of stimulation may be effective at times, if accompanied by explicit statement of reasons for such repetition, but it is easily overdone.

Cultivate the habit of maintaining a friendly attitude toward the class even when obliged to censure severely some individuals. Guard against the temptation to reproach the class as a whole for slackness, misbehavior, tardiness, etc., on the part of a few of its members. Such a course is manifestly unjust and is always resented. If habitual it lowers the respect of the pupils for the teacher and leads to indifference, antagonism and ill will. The same is true of sarcasm, peremptory admonitions, imperious or outright "bossy" manner—anything which humiliates or wounds the self-respect of the pupils, individually or collectively. Avoid the use of the personal pronoun in giving directions. "I want you to do thus and so" carries too strong a suggestion of purely personal masterfulness akin to arrogance. It implies that the class is working for the teacher instead of for itself.

The matter of praise is of considerable importance. Be prompt to acknowledge good work, especially when the class, after some slackness or ragged performance, has made obvious efforts to

pull itself together in response to the teacher's stimulation, censure or quiet demand for better work. Extravagant praise and even routine approbation of ordinary performance is of course weakening, both to the teacher and class. It indicates superlativeness, or too low standards of quality on his part, while it conduces to mediocrity and easy complacence on the part of the class. But considering that good teaching necessarily involves frequent correction and criticism, unsatisfactory trials and repetitions, it is wise to offset this negative element to some extent by a reasonable modicum of praise, when the work is such as to justify it. Approbation of this kind, rendered as the just due to honest effort, gives more point to the constant admonitions, the necessary insistence on close attention to detail, which otherwise would easily degenerate into tedious nagging.

Furthermore, such simple expressions of approval as "Good!" or "That's better!" or "You are doing well, keep it up!" or some humorous comment of laudatory character, if made with the ring of sincerity and genuine satisfaction in the voice, have a marked stimulating effect. The pupils are gratified and spurred to greater willingness and intelligent effort. Their eyes and facial expressions show this, as well as the increased snap, vigor and unison of their movements. Finally, when a whole lesson has been unusually satisfactory from the teacher's standpoint, it is well for him to say so, before dismissing the class, in as simple and gracious terms as he can muster.

Prompt admission of being at fault, when such is the case, effectively heads off trouble and is conducive to good relations. Whenever the teacher is guilty of an error of judgment or makes a slip in his teaching, the mistake must be corrected and any unfavorable impression effaced as soon as possible. If the error is of a technical character, a prompt acknowledgment with due appreciation of the humorous aspects of the situation will *strengthen rather than weaken* the teacher's power, providing such occurrences are not too frequent. If the mistake involves the personal relations between teacher and class (or some individual), an open-minded willingness to see all sides of the case, a frank, dignified admission and regret if in the wrong, are usually sufficient to allay resentment or any tendency to antagonism.

The teacher can do much toward establishing cordial relations between himself and the class by taking and showing interest in its members outside of actual class work. The way he greets them and chats with them on informal occasions or chance meetings has much to do with their feelings toward him. So does real community of interests, as in their games and athletics, their social affairs or their hobbies. It makes for better acquaintance

and good fellowship. Understanding of and sympathetic interest in their school work, their ambitions and, particularly their health and physical condition, are conducive to confidence. Be ready to give help, advice and encouragement whenever needed, yet without being officious. All these things are natural and legitimate channels for the expression of good will and comradeship, points of contact through which the teacher can get into personal touch with his pupils in a dignified yet democratic way.

Where physical examinations are a part of the work the teacher has many opportunities for friendly service other than purely professional. Here he can not only help the pupils to a better understanding of their physical needs and point out the right line of action, but may often be the means of clearing their minds of misconceptions, of influencing their points of view. He may be able to plant seeds of suggestion or to give advice which may lead to better standards and higher ideals of life and work. The real service a teacher can render in this way—hygienically, morally and socially—is as much a part of his function as the formal teaching. Indeed, when the relations between teacher and pupils have come to be of mutually friendly and confidential nature, the teacher can often do more good in an informal way than in the actual teaching. At any rate, he can follow up his formal teaching and try to induce the pupils to supplement the class work by making efforts to apply what they have learned to their daily habits.

It pays to be approachable, to spend time and patient effort in friendly discussion with pupils outside of class, giving reasons for doing some things in a certain way, for omitting or postponing other things; in explaining the mechanism and effects of exercises in a way which they can readily understand; in contrasting the values of different forms of exercise. Sometimes it may be advisable to prove, as far as feasible, the reasonableness, justice or necessity of requiring a pupil to do something which may be inconvenient or onerous to him at the time. It is good policy, generally, to satisfy the pupils' minds and take them into your confidence as far as your time allows and your judgment and sympathy dictate.

III. METHODS AND TECHNIQUE.

The several factors of successful teaching—personality, understanding of pedagogic principles, knowledge and proper management of gymnastic material, and the special technique of *teaching*—are all so intimately related that in practice it would be difficult to dissociate them. Yet, we may recognize distinctions in these respects. Some teachers may get results in certain directions chiefly by virtue of their personality, while they fall short in other directions owing to deficient knowledge of principles, or insufficient skill in the technique of teaching, or both. The reverse may also be true to some extent. At any rate, for purposes of analysis and discussion, certain phases of teaching may be grouped under the head of technique. Such, for example, are methods of formation and distribution of the class on the floor; the uses of commands; of the active and relaxed positions; methods of demonstration, instruction and correction; devices for stimulation; variations in the style of work—whether single movements on command, or rhythmical; the selection and combination of movements according to the style of work and the method of teaching it. All these technical details represent, of course, applications of pedagogic principles, and their effectiveness is largely dependent on proper progression and arrangement, as well as on the personal qualities of the teacher.

1. Formations, Distribution and Position of Class on the Floor.

The choice of formation and the methods of opening order will be determined, among other things, by the facility of teaching them, by the ease and speed of their execution, by the amount of time and room available. Other considerations are the spacing and distance suitable for the kind of work to be taught, the distribution most favorable for giving the teacher a full view of the class and for enabling all members of the class to see and hear the teacher. The extent to which the class can "see itself" is also of some consequence through its influence on unison and rhythm. Finally, the symmetrical and orderly arrangement of the class and the manœuvering necessary to obtain it are not without effect on its members. The close attention required, as well as the suggestion of order and discipline, are conducive to the proper spirit of the work.

The following are some of the more common and simple procedures:

1. Perhaps the simplest and easiest way to get a class arranged in open order is to have the pupils, on the signal, take their places on spots painted on the floor at proper distances (say at intervals of five feet, in rows about four feet apart, the spots in each row being placed half way between those of the next). This obviates the necessity for any preliminaries, such as alignment, numbering, facings and marching steps. It may be of advantage under conditions where the spirit and traditions are strongly against anything savoring of formality or military discipline, or where the necessary time for preliminaries cannot be spared. It is especially useful in large classes, with irregular attendance, where the main purpose of the work is hygienic, and the educational or disciplinary value of even a few simple manœuvers necessary to open order would not be appreciated. In classes where record of attendance is kept, and each member is assigned a numbered spot, the roll call may be simplified by noting the absences on a plotted sheet of paper or on a numbered name file. Spots may also be used to advantage in conjunction with some of the more formal procedures of opening order, especially those preceded by marching.

2. The next easiest way to get a class together and into open order is to line it up in a single rank, count twos, let numbers One take one or two steps forward and numbers Two the same number of steps backward. The spacing and distribution are such that most movements can be executed without interference of the pupils with each other, if the class is faced toward one end. A few exercises, however, such as the prone falling position, forward and backward charges, require that the class be faced to the front.

This formation is suitable for small classes (of twenty or less). It is so simple that a class soon learns to make it with speed and precision. It gives the teacher a good view of each pupil from any side of the class. When the class is faced toward one end, the lines are easily kept straight, serving as guides for the plane and direction of movements. The spacing is readily maintained or adjusted. All the pupils can see the teacher without difficulty and the majority can see a considerable portion of the lines.

3. Another simple and fairly easy method of opening order, differing but slightly in principle from the preceding, is to form one rank, count threes (fours, or even fives, according to the size of the class), then let each individual take as many (long) steps forward as is indicated by his number, or twice as many (short) steps backward. Or let numbers One stand still, num-

bers Two take one step forward, numbers Three two steps, etc. (or twice as many backward). Or, in case of threes, numbers Two stand still, numbers One take one step forward, numbers Three one step backward. In such a formation all exercises can be done with the class facing to the front, except perhaps club swinging and exercises with very long bar bells.

The disadvantage here, as in the preceding, is that the class is spread out too much in one direction, and space is not used economically. This may be an important item if the class is large and the room scant. Then, too, the lines are apt to be less distinct and not very readily straightened. The class cannot "see itself" to the same extent as in formations where many pupils stand behind each other in long, straight lines. The importance of the last is, of course, not very great, but should be considered. Furthermore, when a different number of steps are taken by different portions of the class, all starting together, but finishing one after another, the unison and rhythm are apt to suffer. There are lacking the symmetrical appearance and the full, rhythmic sound of uniform action which stimulate a class to lively response. However, this formation works fairly well with semi-informal classes in which the membership is varying and the attendance irregular.

4. The next in order, as regards simplicity, or at least facility of execution with a large class, is to line up in one rank near one of the long sides of the gymnasium; count fours (fives or sixes); face right (or left), making a long single file facing one of the ends of the hall. Then command "Forward, *march!*" "Column left (or right), *march!*" and continue marching until the first group of four (five or six) has turned the corner and taken ample distance. On the command this group then faces left (or right) and marches forward with short steps while the next group turns the corner, takes full distance, faces, marches forward, and so on, until the whole class is marching down the hall in an open column of fours (fives or sixes). If hand apparatus is to be used, this can be taken from the racks while the class marches once around the hall in a single file.

As a slight variation on the above method the groups may remain in close order after turning the corner, and the lateral distance may be obtained by taking side steps after the class has arrived at the proper place on the floor and is marking time. This may be made a rather pretty manœuver if executed with precision and good alignment. Some such command as "Form column of fours: Fours, by the left flank, *march!*" may be used to change the single file into a column of fours.

Other variations on this method of opening order readily suggest themselves. When marching is used regularly as a part

of the lesson, a column of fours may be formed, either stand still or while marching, by giving "Fours right (or left), march!" or "Fours right (or left) oblique, march!" or by any of the various manœuvers so well described by Mr. Schrader in his article on the "Teaching of Tactics."*

5. With classes of children the following may be used to advantage: After marching half-way around the room in single file, turn at one end and march down through the center. At the other end alternate pupils are turned right and left respectively and march up on opposite sides of the room. They then meet and march down the center in pairs. Then alternate pairs are turned right and left, meet again and form fours, march down the center and open up as described in the preceding paragraph. This manœuver takes considerable time, but it makes numbering unnecessary. When the children come into the gymnasium in a double file the whole procedure can be managed fairly quickly, only one division and one circuit of the room being necessary.

6. When classes are large enough to make a preliminary formation on two ranks desirable, modifications of the methods described in paragraph four may be used, providing the class is proficient enough in marching to warrant it. Modifications of the methods described in paragraphs two and three may be used, with or without preliminary marching, as follows:

7. If the method described in paragraph three is used, the ranks are first opened by three or four steps forward or backward by one rank, or by each rank taking two steps in opposite directions. Then numbers One, Two and Three open up as described for one rank. The disadvantages of this formation are similar to those already suggested as inherent in this method with the single rank formation.

8. With classes of moderate size—from twenty to sixty—a modification of the method described in paragraph two is, on the whole, the most satisfactory. The preliminary formation consists of two ranks, a little more than arm's distance apart. After aligning and counting twos (in the front rank only), the ranks are opened by the front rank taking two steps forward and the rear rank two steps backward. Numbers One in both ranks then take one step forward, numbers Two take one step backward. The class is then faced toward the short end and the lines straightened. In the beginning, each part of the manœuver is best done on separate command, even each of the two steps taken in opening ranks. Later the whole may be done on one command, including the facing. Still later the facing

*The Teaching of Tactics. Carl L. Schrader. Am. Phys. Ed. Rev., Feb., 1912.

may be taken first, the lines are then opened by each taking two clean-cut side steps in opposite directions,—after which numbers One take one step to right (toward the side of the front rank), numbers Two one step to left (toward the side of the rear rank). In its final, perfected form the whole manœuver may be executed on one command such as "Left (or right), open order, march!" To attain speed, unison and "finish" in this method of opening order requires considerable practice, as well as good discipline and perfect attention on the part of the class, *and unlimited patience and perseverance on the part of the* teacher. But it is worth the effort in the long run. To insure unison and proper rhythm, make the pause between the facing and the steps, as well as between each step, relatively long; insist that the weight is not transferred to the advancing foot until the last moment, and that the following foot is lifted clean and clapped smartly to the other. Dragging the following foot makes the whole movement slovenly. With classes of varying membership and irregular attendance this procedure would probably not be satisfactory.

With classes numbering more than sixty or seventy the same principle of opening order may be used from a preliminary formation of three ranks. The middle rank stands still while the front rank takes four steps forward, the rear rank four steps backward (or each takes the same number of side steps in opposite directions). Numbers One and Two then open up by one step each, in opposite directions. This is not a very satisfactory method, however, owing to the difficulties of getting the preliminary alignment and numbering done quickly and well.

A better way in the case of very large classes is to line up in two or more divisions at proper distances, each on two ranks, and then proceed exactly as when the class is undivided. The only difference is that the divisions stand on lines parallel with the short axis of the room. When such divisions are necessary, it is well to have assistants or monitors help supervise the preliminary alignment and numbering. With such large classes a platform is very convenient, if not necessary, for occasional use.

Variation in the formation, by facings, during class exercises.

Having arranged the class in open order on the floor, it is not always best nor even practicable to keep it facing the same way throughout the lesson. Thus, for example, if the spacing is close and alternating, certain movements cannot be very well executed when the class is facing to the front, shoulder to shoulder (front or rank formation), such as arm movements and leg raisings sideways and side lunges; while such exercises

as the prone falling position, movements from the lying position, leg flinging forward, and forward or backward charges cannot be done without risk of interference when the class faces one end, pupils standing one behind the other in long files (flank or file formation).

Occasionally an oblique formation may be necessary for the proper, unhindered execution of most of the exercises. This applies especially when the pupils in contiguous files stand abreast of each other, as would be the case if the methods of opening order described in paragraphs four and five have been used, and when the spacing is necessarily inadequate from lack of room. This difficulty might also be obviated by having every other file take a step forward. When work is carried on in school rooms, between the desks, the oblique formation gives most room and freedom from interference by desks or neighbors.

Besides varying the choice of the three formations—front, flank and oblique—on grounds of convenience as regards the execution of movements, the formation may also be varied for the purpose of aiding the pupils to execute the movements correctly. This applies especially when beginning work with an untrained class, but it is helpful at all times in giving the pupils guides or landmarks by which they may be aided in finding the right plane or direction of movements. For example, in a trunk bending sideways, the chances for exact performance, uncomplicated by other elements like twisting, forward or backward bending, are a little better when done in a flank than in a front formation. This enables the pupils to look along their own lines and usually also along the lines or boards on the floor. In forward bending of trunk, forward foot placings and charges, a front formation seems to work better than a flank formation. For oblique charges the oblique formation may be helpful at first.

Another consideration, and an important one, by which the choice of formations should be determined, is the degree to which it facilitates systematic observation of the work by the teacher. Each ensemble movement may be observed better from one point of view than from any other. With the class faced in the most suitable way and the teacher standing at a point or moving along a line giving the best view of the greatest number, he can "sight" along the lines of pupils and easily see every deviation from correct execution. For example, a forward or "backward" bending of trunk, a forward charge or a toe-support (reverse) charge can be best seen from one end of the class when in front formation; trunk twisting and exercises in which the arms are held in or pass through any of the cross positions (side horizontal, bent

or straight) are best observed from one end of the class when in flank formation.

Finally, as has already been suggested, the mental effect on the pupils of seeing a large part of the class doing exercises in unison is worth considering, and the choice of formation may at times be determined on this ground. In this sense appearances count. Then, too, snap, unison and steady rhythm are most easily obtained when the greatest number can see the greatest number. This is usually in the flank formation. Sometimes all these considerations coincide and all are met better by one formation than by any other. At other times they conflict, in which case the most important consideration will determine the choice. This is usually a matter of judgment and experience.

2. Gymnastic Commands.

The words of command are essentially signals, descriptive or not, as the case may be. They are used in class-teaching primarily to insure unison and uniformity of movement, as well as to train quickness of response. Their purpose and use are in all respects similar to the familiar device for starting a number of individuals in a race: "On the marks!" "Get set!" *"Go!"* Or they may be likened to the preliminary raising of the baton or arms, and the final arm, head and body movements of the leader which start the playing of an orchestra. As signals for starting and stopping movements the use of the commands is largely a technical matter, which anyone may learn by practice. But aside from this, the commands constitute one of the channels through which the teacher's personality, as well as his ideas and ideals about the work, find expression. For after their proper use, technically, has been acquired and become automatic, they may yet be varied in their suggestive quality, their intonation, intensity, etc., so as to have a marked influence on the class and the quality of the work. They may stimulate or deaden, quicken or slow down; in short, they may, and generally do, reflect the teacher's mental and bodily state very accurately.

Essential features of commands. Generally speaking, any agreed-upon device may serve the main purpose of a command. It may be a noise made in any way, such as tapping the floor with a stick, or clapping the hands; or a gesture; or a preliminary chord on the piano, followed by a sharp movement of the teacher's head, arms or whole body; or a warning word, such as "All ready!" and then a more or less exaggerated movement by the teacher, which becomes the first part of the gymnastic exercise. Such devices, and especially the two last mentioned,

are by no means uncommon. They are often used when the work is entirely rhythmical, "oscillatory," or approaching the dancing type. With a little practice a class may learn to begin an exercise in this way with a fair degree of unison. Often, however, there is apt to be some hesitation, and many pupils do not "get under way" until the first or second repetition of the movement. With these methods of starting, the movement is usually discontinued, with or without any special signal, when a certain number of repetitions have been made, as indicated by the count or by the music.

Even in such rhythmical exercises, however, it will be of advantage to start and stop each movement by a proper command. This may be of the simplest character, so long as it embodies the main features of all commands, namely, a preliminary, descriptive or warning part, a pause, and a final, executionary part. The preparatory part states or reminds briefly what is to be done, and with the following pause tends to focus attention and give every one an opportunity to get ready for instant action. The final part is the real signal to go ahead. On the proper use and relation of these parts of the command—as regards distinctness, intensity, pitch, intonation, inflection and duration—depend, more than on anything else, the degree of unison, snap and precision of the movement. These details will be discussed later.

Different kinds of commands. For rhythmical exercises the name of the movement, if sufficiently brief and expressive, may serve as the preparatory part of the command. When a descriptive term for a complex, compound movement is lacking, or would be too cumbersome to use as a part of a command, some such warning as "Ready," or "All together," or "To the left," following a description and demonstration of the movement, answers the purpose very well. Such a warning may also be used in conjunction with a descriptive term in order to make sure of the preparedness of every one. After a sufficient pause the final part of the command is then given by the sharp enunciation of some such word as *"Begin!" "Start!" "Go!"* or *"March!"* Having made a satisfactory start and a sufficient number of repetitions, the exercise is discontinued by some such command as *"Stop!"* "And *Stop!" "Hold!" "Halt!"* or "Class, *Halt!"* The choice will be determined partly by taste, partly by the style of the work, or by the character of the particular movement. (See section on the technique of using commands.)

When exercises are done singly on command, whether such exercises be simple or combined movements, followed by return to the starting position, or parts of compound movements, the commands may be made in two ways.

1. A descriptive command with the verb in the imperative for each movement or part, using the name of the movement as a basis. The words of the descriptive term are slightly modified and their order changed. The noun and adverb are put first, serving as the preparatory command, while the imperative verb is put last, as the command of execution. For example, the command for the simple movement "Forward bending of trunk" would be "Trunk forward—*bend!*" This would necessitate a command for the return to the starting position. In the example given this might be "Trunk—*raise!*"

For a combined movement, such as "Arm bending with alternate foot placing forward," the command would be "Arms bend and left (right) foot forward—*place!*" The simplest command for the return movement, in this case, would be *"Position!"*

As an example of making the commands for the parts of a compound movement from its name, take the movement "Heel raising and knee bending." Here the commands would be "Heels—*raise!*" "Knees—*bend!*" "Knees—*stretch!*" "Heels—*sink!*"

When the starting position is other than the fundamental position, the command for the movement by which this derived position is reached should always be of this kind. For example, if a movement such as "Side bending of trunk" is to be done repeatedly from a starting position with the hands behind the neck and feet apart, the command for the latter would be "Hands on neck and feet sideways—*place!*" When the real movement (side bending) has been repeated a sufficient number of times, the return to the fundamental position is most easily accomplished by the command *"Position!"*

2. Another way to make the command is to use the descriptive (or empirical) term serving as the name of the movement—usually consisting of a noun, the present participle of a verb, and an adverb for each element of the movement—as the preparatory command for the movement as a whole, while the numerals are used as executionary commands for the respective parts. The return to the starting position, in reverse order, is implied. Thus, in the examples given above, the commands would be "Forward bending of trunk—*One!—Two!*" and "Heel raising and knee bending!—*One!—Two!—Three!—Four!*"

When to use these methods, respectively. For simple or compound movements, in which only one part of the body moves at a time, either of these methods may be used with equal advantage. The second method is perhaps the safer, or at least the more readily available in case of uncertainty. When it is desired to make many repetitions on command the second is by far the more suitable, as the frequent repetitions of descriptive

terms are superfluous and take too much time. In such cases it may be of advantage to use the descriptive command with the verb in the imperative the first time, then for the repetitions some such word as "Repeat," or "Again," or "Once more" as preparatory command, and the numerals as final commands.

In combined movements—that is, movements in which two or more parts of the body move simultaneously—the second method is often the more suitable, as the first would be too cumbersome. Take for example such a movement as "Arm flinging sideways with knee bending." Using that term as the preparatory command and *"One!—Two!"* as the final commands for "going" and "returning," respectively, is simpler and is more readily spoken than such a clumsy combination as "Arm sideways fling and knees—*bend!*" followed by an even more cumbersome and therefore embarrassing combination of descriptive commands to get the class back to the fundamental position.

The above applies with even greater force to combined, compound movements, especially when of a fairly complex character, such, for example, as "Arm bending with side lunge, then arm stretching sideways with side bending of trunk." In such a case the best way is to demonstrate the movement carefully, naming each part while showing it, then command "Attention!" (if the class has been standing at ease) "All ready, left—*One!—Two!—Three!—Four!*" Again, in many of these combined, compound movements a combination of the two methods of making the commands may be advantageous. For example in such a movement as "Arm flinging sideways-upward with alternate foot placing forward and heel raising," there is at least a fair choice between the second method throughout, and the following combination of the two methods: "Arm sideways fling and left foot forward—*place!*" "Arm flinging upward with heel raising—*One!* (Return)—*Two!*" *"Position!"* Then: "Repeat to right (on four counts)—*One!—Two!—Three!—Four!*" Such a combination of methods is especially useful when the class is familiar with the elements of the compound movement, but when the descriptive term for it would be too lengthy to be readily apprehended or remembered. By using the above combination of methods in such movements, detailed demonstration as well as too lengthy descriptive terms may be avoided, thus saving time and insuring continuity of work and attention.

General factors in the use of commands. The effectiveness of the commands in eliciting promptness and unison of response, vigor and precision of execution depends on many factors. Foremost of these are the kind of personality of which they are an expression and the strength of the teacher's hold on the

class—his "power of command." While a teacher with a strong personality may get along tolerably well in spite of faulty or clumsy technique, a skillful use of technical devices will strengthen his power and control, and will make the work more effective as well as more interesting. The simplicity, judicious use and proper delivery of the commands contribute materially to the smooth progress, the continuity and the life of the lesson.

Simplicity and correct language. Try as far as possible to select simple, self-explanatory commands. Avoid too technical terms, or words and phrasings which are bizarre and out of keeping with ordinary, correct use of language. Such terms attract too much attention to themselves (or to the teacher), and too little to what they stand for. They may require considerable mental effort to commit to memory and therefore need frequent explanation. This means divided attention on the part of the class, a great deal of unnecessary talking on the part of the teacher, and loss of time for both.

Stick to agreements. All commands, or rather the meanings attached to them, are in the nature of agreements. Therefore it behooves the teacher to stick to a given usage, once agreed upon. If he thinks he can improve on any command previously used, or deems a change desirable for any reason, he should make an explicit statement to that effect—make another agreement superseding the old—and stick to the new usage. Nothing is more puzzling or harassing to a class than varied and inconsistent use of commands by the teacher; and nothing could be more unfair than reproaching a class for failure to execute movements properly, when such failure is obviously due to the teacher's bungling or confusion of commands.

Voice and enunciation. Make the commands distinct and clear, and in a voice sufficiently loud to be easily heard by those farthest away (if attentive). While excessive loudness is not advantageous, the main efforts of the pupils should be spent in doing the work, not in trying to hear and understand the commands. It is well to cultivate the power to make people listen, rather than to make them hear; but that refers more to securing their attention by well modulated use of the voice (as well as other means), than trying to overcome their inattention by loud shouting. Here, as always, superlativeness and excess indicate lack of adaptation to purpose, and are therefore weakening. Let the pupils feel that the teacher has a good deal more voice power than he is using—that he has abundant reserve, should occasion demand it.

Instead of depending exclusively on volume and intensity of sound strive for more perfect enunciation, for a better "plac-

ing" of the voice, as the voice teachers express it. This is attainable, to some degree at least, even without special training, if the teacher will cultivate the habit of observing himself in a detached way; then practice speaking the difficult or ineffective words and sounds in a way to make them carry farther.

Do not overlook any little thing that may help in attaining greater carrying power of the voice. Be sure to face the class and hold the head high when delivering the command. Find the "focal" points in the various formations, from which every member of the class can be most easily reached. With large classes, and in gymnasia with poor acoustic properties, all these things are of considerable importance, not only in making commands and instructions effective and understood, but in conserving the vitality or at least the voice of the teacher.

Commands following each other too rapidly. As a rule do not give a command before the next preceding has been executed and the position held for a moment, unless there are good and sufficient reasons for so doing. Such may be the case, for example, in marching. When desiring to make rapid and successive changes of direction or formation, during the march, it is often necessary to begin a new command while a previous one is in process of execution.

The mistake of giving commands too rapidly is sometimes made in the effort to stimulate a class to quick response and "snappy" execution. It is then a case of a good thing carried to excess. A rapid change of movement or position does stimulate the attention and tends to produce alacrity and speed. But if the changes are so rapid that many pupils cannot follow, or can only half do the movements, the net result is confusion and slovenly work. If this is allowed to pass it is equivalent to acceptance of poor response from the class as a whole. The effectiveness of the commands is weakened rather than strengthened, and this will react unfavorably on the general quality of the work as well as on the teacher's hold on the class. The attention is not stimulated. It may even be dispersed, its object varying so rapidly that a proper focusing never has a chance to occur.

Recalling movement already under way. In complex serial movements a recall may sometimes be necessary before the first cycle of the movement has been completed. This often happens even in comparatively simple movements when "trying" a class and finding that the majority do not understand what is wanted, or are unable to do the movement properly. Under such circumstances it may be wise to command *"Stop!"* or *"Position!"* (or both) sharply. Or it may be as well to wait until the failure is complete, in order to impress the class, and then say, in-

A similar procedure might also be tried when the class fails to execute the movement because of inattention or mischievousness. In that case the explanations or re-demonstrations should be replaced by reprimand of the guilty pupils. Recall should also be made promptly when failure and confusion are due to a faulty or wrong command. This may happen to any teacher occasionally and should always be acknowledged.

Superfluous commands. The mistake is not infrequently made of giving two executionary commands for one movement. This is most likely to occur when the parts of a compound movement are given singly, as for example "Left —*face! One! Two!*" (when it is desired to have the class hold the position reached by the first part of the facing). Here, as in many similar movements, the command for the complete movement is of course sufficient for, and by agreement applies only to, the first part. A class can be readily made to understand that. It is the fear that the class will not stop after the first part has been executed, or the feeling that it is illogical to say "Two!" without previously having said "One!" that leads inexperienced teachers to make this mistake. Sometimes this fault does not produce the failure of unison in the response that might be expected. This is because the imperative of the verb—the first executionary command—is not preceded by a pause and is not pronounced with the sharpness and inflection which should characterize the final command, while the numeral serving as the real final command is delivered with proper emphasis and intonation. The imperative verb is then not truly an executionary, but rather a part of the preparatory command. This redeems the inconsistency to a great extent, and the chief criticism in that case is on incorrect use of language. The present participle of the verb would be more logical. More often, however, there is some suggestion of the final command when the imperative of the verb is used, and this generally "draws" a number of the pupils while others wait for the "One!" Unison and precision of response are of course out of the question under such circumstances. When this mistake habitually occurs in giving parts of compound movements singly on command, the principal object—that of drilling the class in quick and accurate response—is defeated, and the quality of the work, generally, is lowered. While a class may, after a time, be trained to ignore the first and respond only to the second, the habit of giving double commands cannot fail to increase the teacher's

3. The Technique of Commands.

The preparatory part of the command, as already stated, serves two purposes. One is to express briefly and concisely what is to be done. The other is to focus attention, to produce a mental and bodily state of readiness for instant action. Both of these purposes are accomplished by using the name of the exercise, if not too long, as the preparatory command; by speaking it in a clear, even tone of voice, pitched relatively low, or with only a slightly rising or falling inflection; by taking the utmost pains to enunciate every word distinctly; by using enough volume and intensity of sound to reach those farthest away. Preferably the teacher should face the class.

When the exercise is sufficiently familiar to the class to make a detailed demonstration and explanation unnecessary, it is well to accompany the preparatory command by a "cue." This consists of a rapid, more or less detailed execution of the movement by the teacher while naming it. It may be a mere suggestion of the main features of the exercise, serving as a reminder; or it may be done with full vigor, accurate detail and exact rhythm, according to the requirements of the occasion. In this way much time may be saved and the teacher may avoid too frequent breaks in the continuity of the work occasioned by giving the class "In place rest," while explaining and demonstrating the exercise.

On the other hand, too lengthy preparatory commands should be avoided. Whenever possible, let them be suggestive rather than too descriptive. While a warning or stimulating admonition at times may be of advantage as a part of the preparatory command, it is not wise to do this too much, or too frequently. When used habitually and in a routine way this device loses its force. Besides, the class feels that the teacher does not have sufficient confidence in its ability and good intention.

An excessively lengthy preparatory command for compound, combined movements, especially when very complex, may be avoided in two ways: 1. Either give each part of the compound movement separately the first time, using a combination of the two methods of forming the command, as suggested in a previous section, followed by, "Repeat—*One!—Two!—Three!—Four!*" Then use some such term as "Continue—"or "Keep it going—" or "In rhythm—" or "In Series—" as preparatory command, and

"Begin!" or *"Start!"* or *"Go!"* as final command for further rhythmic repetitions. 2. Or give the class *"In place rest,"* demonstrate the complete exercise, then command *"Attention!"* "All ready—*One!*" *"—Two!"* etc. In this way the pupils are not held immobile in a state of high tension too long on the one hand, and on the other there is less opportunity for a slackening of the fundamental position with a consequent loss of readiness and a failure of prompt response. But a rational progression will obviate the necessity for too frequent interruptions of this kind and will enable the teacher to use the first method the greater part of the time. For if the majority of the exercises in the lesson consist of new combinations of movements with which the class is familiar, the more deliberate method of demonstration and explanation with the class in a relaxed position may be reserved for new types, or for the more difficult combinations of known elements.

The pause between the preparatory and final command is perhaps the most important single factor in insuring unison of response. The sudden cessation of speaking, the following complete silence and stillness have the effect of all sharp contrasts—of attracting and focusing attention. The pause makes possible and brings about that state of readiness and high tension so necessary for vigorous and united action.

The duration of the pause should correspond to the time needed by the pupils to comprehend what is required of them and enable them to gather themselves together for the proper effort. The more complex and difficult the movement, or the rhythm, the longer should be the pause. In this short period of stillness the teacher, by a sweeping glance, should try to ascertain if all understand and are ready. Such a rapid survey of the class during the pause may save the necessity of a recall (after the movement has begun) because of partial or entire lack of unison and poor execution. The teacher may discover inattentive pupils and by word or gesture bring them to attention. Or the expression in the pupils' faces may warn him that they do not feel sure of themselves, that they do not understand what they are expected to do. This usually means that the explanations, etc., have been inadequate and that it is necessary to begin all over again. The movement may then be countermanded, in an informal way, before the final command has been given, and the confusion entailed by a total failure of execution may be averted.

To make a proper pause between the two parts of the command, although apparently such a simple matter, is one of the hardest things for many young teachers to learn, or to stick to after learning. To acquire the habit, it may be helpful, in the

beginning, to think the word "pause," or even to speak it inaudibly, before giving the final part of the command.

The tendency of every class to anticipate the command, to make a "false start," often induces the unwary teacher to shorten the pause, or to neglect it altogether, in an unconscious effort to forestall a failure of unison. Hurried commands, with insufficient pause, in turn increase the tendency to anticipation. This is sometimes an expression of eagerness and alacrity on the part of the pupils. More often, perhaps, it is due to inability or disinclination to wait until the proper signal has been given. This requires control, power of inhibition and considerable effort of mind and body. It is the line of greatest resistance. In any case such anticipation is fatal to unison and quick response from the class as a whole. The first impulse of the teacher (as of a starter in a race) is to try to save the situation by getting ahead of those who show signs of making a false start. But hurrying the command by shortening the pause is rarely effective in producing unison of response, as many of the pupils are caught unprepared. The next time these pupils will anticipate the command and the unison will be still more impaired.

This reaction of teacher and class on each other is particularly apt to occur when single movements on command are repeated many times, and the intervals between the commands are too uniform as well as too short. It not infrequently happens in such cases that the class begins doing an exercise on command and after a few repetitions is doing it rhythmically. At first the teacher makes desperate efforts to keep ahead of the class by hastening the command, but the ultimate "catching up" is inevitable.

If the descriptive command with the imperative of the verb is used, the only thing to do to prevent this "sliding" into rhythmical movement with its attendant lack of unison is to stop and allow the class to make one false start; then recall the movement in an informal way and admonish the class to wait for the command. After that be more careful to have a sufficiently long and varied pause between the two parts of the command.

If the numerals are used as commands the same method may be employed to head off the tendency of a movement given on command to become rhythmical. Often, however, things have gone too far before the teacher fully realizes the situation. If he then stops giving the command the class will continue in a scattered way for some time. Reproach for not waiting for the command is then not only inconsistent but unjust. Under such circumstances it would be wiser to accept the situation, frankly allow the movement to become continuous and try to steady the rhythm. *The numerals are then no longer commands,* but simply

aid in keeping the time and serve as a vehicle for stimulation. They correspond to the rhythmical movements of the baton, arms and head of the leader in guiding the playing of an orchestra, and are *spoken at the end of the movement, instead of preceding it,* as is the case when they are used as commands. To discontinue such a rhythmical gymnastic movement a proper command is necessary. The mere cessation of counting will not stop it.

The tendency to anticipation by the class is greatly increased if the teacher is himself guilty of the same offense while doing the movement with the class. In extreme cases of this kind the class is really not doing the movement in response to the command, but is simply following the movements of the teacher by direct imitation. There is then usually very imperfect execution and entire lack of unison until the movement has gradually become rhythmical. Such a confusion of methods is to be deprecated, even though a class may become accustomed to it after a while. It is illogical and conducive to poor quality of work. If the teacher finds it difficult to time his own movements properly, it is better to refrain altogether from participation in the work, until he has learned by practice how to do it in a way to help the class rather than the reverse.

The duration of the pause may be made excessively long. This entails an unnecessary strain on the attention—keeps the class "on edge" too long and makes the purely mental part of the work too prominent and severe. Like every other good principle, this one may be unduly emphasized to the detriment of the work and the weakening of the teacher. If the pause is too long the attention is apt to relax after a while. This is sometimes seen in marching. When the class is allowed to take several steps before the final command is given the result is often failure of execution. With a well-trained class the pause in the different types of movement comes to be of a customary length, with always enough variation and uncertainty to produce zest and alertness, but without annoyance.

The only commands in which a pause may be dispensed with are "Right *dress!*" "Count twos (threes, etc.)!" and "Class *halt!*" In the first a pause would be desirable, but by agreement with the class may be left out in order to distinguish this command from "Right—*face!*" and so save confusion. A pause is unnecessary in any command for counting off, as this applies only to one individual, and there is then no question of unison. In "Class *halt!*" the word "class" is somewhat drawn out during one movement and the "*halt!*" may be given on the next. As it is customary to do two movements before the class comes to a standstill, there is ample time to check momentum in marching

and recoil in such movements as "alternate knee-upward bending" or "jumping on toes."

The final part of the command is the signal for the execution of the movement. It is usually and preferably only one syllable. It varies in quality, pitch and inflection of voice, in sharpness and intensity of sound according to the character of the movement to be done. Thus a quick movement requires a short, sharp, snappy executionary command, usually—though not always—pitched higher than the preparatory command, and with a rising inflection. It is of a somewhat explosive character, the effect of sudden contraction of the abdominal muscles. Often the aspirate sound of the letter "h" is thus produced, as in *"place"* and *"stretch."* These, when short and sharp, are pronounced as if they were spelled "pl'hace" and "str'hetch." A slow movement, on the other hand, requires a more drawn out executionary command, usually pitched lower than the preparatory command, and with a falling inflection.

While it is true that high pitch and rising inflection are suitable for quick movements, and low pitch or falling inflection for slow movements, it is often necessary to depart from this rule in order to avoid too much sameness. Thus, when giving the parts of a compound movement separately on command, it is wise to vary the pitch or inflection of successive commands, even though all the parts of the movement are of equal speed. For example, in the movement "Heel raising and knee bending," done slowly, the inflection of the commands for the parts might with advantage be as follows: "Heels—*raise!*" (falling), "Knees—*bend!*" (rising), "Knees—*stretch!*" (rising) and "Heels—*sink!*" (falling). Or the first and third might be given with rising, the second and fourth with falling inflection. Similarly, if the movements are to be done quickly, the successive commands (in this case the numerals) may be varied in pitch, although collectively they are pitched higher than the preparatory command. For example: "Heel raising and knee bending—" (falling inflection) *"One!"* (short and sharp, with rising inflection), *"Two!"* (somewhat lower pitch), *"Three!"* (rising again), *"Four!"* (falling). There are unlimited possibilities for variation in pitch and intonation of commands, and it is very desirable that this be kept in mind whenever it is necessary to give a series of commands in rapid succession. Indeed, the proper inflection and constantly varying intonation of commands are as much of an asset in teaching gymnastics as is a well modulated and varying tone of voice in ordinary conversation or in public speaking.

It sometimes happens that the imperative of the verb used for the final command is suitable only for a quick, or—more often—a slow movement. In such cases another word must be substituted, as for example, *"fling"* for *"raise"* in straight arm move-

ments. Again, the method of using the name of the movement for the preparatory command and the numerals for the final commands is always available. The numerals, up to four, are as useful in this respect as in simplifying lengthy or cumbersome commands for combined movements. As an example, take the movement "Arm bending with heel raising." If the movement were to be slow, it might be possible to use the descriptive command with the verbs in the imperative, although it would be rather clumsy. As this combined movement is usually done quickly, however, the descriptive command with the imperative verbs *"bend!"* and *"raise!"* can hardly be enunciated in a way to suggest speed. Here the other method is not only simpler but more natural and infinitely more effective. Compare "Arms bend and heels—*raise!*" (the last word pronounced with short vowel, if that were possible, and with rising inflection); then "Arms stretch and heels—*sink!*" on one hand, with "Arm bending with heel raising—*One!—Two!*" on the other.

When, for any reason, it is particularly desirable to use the descriptive command with the verb in the imperative, but the sound of the command does not suggest the desired speed of the movement, then it is necessary to accept the speed suitable to the command when doing the movement the first time. For repetitions the numerals may be used as final commands and the speed of the movement made whatever the teacher wishes. The movement "Heel raising and knee bending" may again serve as an example.

The only difficulty in using the numerals as executionary commands is that the tendency of the class to anticipate is greater and more difficult to check than when the other form of command is used. This has already been discussed and shown to be due to an insufficient or too uniform pause between the commands. If the teacher is on his guard against this fault, and against the equally common mistake of anticipating his own command when doing the movements with the class, there need be no difficulty in the use of the numerals. One other point might be mentioned in this connection. When making many repetitions on command (in itself an undesirable thing) and using the numerals, it is better not to "count up," but to repeat those numerals which stand respectively for the first, second, third and fourth parts of the movement. If the movement consists of more than four parts, the corresponding numerals must of course be used. But for the vast majority of suitable exercises the first four numerals are all that is necessary. The fact that they are all of one syllable and have vowels capable of being pronounced either quickly or slowly, with any kind of inflection or intonation, make them peculiarly adaptable to any kind of movement. This is not true

of most of the numerals above four. Besides, counting up indefinitely has a stronger tendency to produce anticipation and to make the movement rhythmical than any other way of giving commands. Nor has it any special merit or advantage, except that it indicates the number of repetitions. This is too insignificant a consideration to have any weight in the choice of method.

The use of the numerals as a device for marking time should be clearly distinguished from their use as commands. Simple as this distinction is, in practice confusion in the two ways of using the numerals is not at all uncommon. It is partly responsible for, and to a certain extent also caused by, the illogical procedure of "sliding," by gradual steps, from doing single movements on command to rhythmical, continuous movement. The reverse is also seen occasionally. In trying to start a rhythmical movement an inexperienced teacher may fail to do so for two reasons. Either the command *"Begin!"* has been delivered in an ineffective manner or not given at all; or the numerals, intended in this case as time-markers, are pronounced too sharply, with too much inflection and not exactly on time. This causes many of the pupils to hesitate at the next movement, to wait for the next count, unconsciously mistaking the counts for commands. The unison is thus broken up, and if the teacher stops counting the class stops working. To all intents and purposes the class is doing each single movement on command, even though it be in a ragged manner; while the teacher is under the impression that a rhythmical movement is in progress and is puzzled why he cannot get it under way. Here, as in the opposite case (a class going ahead of the command and "sliding" into a ragged rhythmical movement), it is best to stop. In this case it would be even more unjust than in the other to expostulate with the class. It would perhaps be better for the teacher to admit being at fault. In any case, it behooves him not to make the same mistake again. Instead, he should try to make the command *"Begin!"* sharp and ringing, guard against anticipating the command in his own movement, make his counts in an even tone, in a slightly lower pitch and with less sharpness than the word "Begin!" *The count in a rhythmical movement coincides with the end of the movement.* Of course the teacher must know how to carry a steady rhythm. If he wishes to change this while the movement is in progress, an admonition to that effect is advisable. This is followed by a gradual or sudden acceleration or retardation, as the case may be. It is not an easy matter and depends for its success on the teacher's skill in giving the count and doing his own movement slightly ahead or behind the majority of the class.

The custom of "counting up" indefinitely, or to eight and then backward, instead of using repeatedly the first two, four or six numerals—according to the number of parts in the compound movement—may be a matter of taste. At any rate it is a matter of differing opinion. There is this to be said against counting up: It implies that the teacher thinks it his duty to count or otherwise mark the time throughout, and that he habitually does so. This may not be the best thing to do. For one thing, the class should as often as possible be given an opportunity to carry a given rhythm unaided by the teacher. Again, the teacher should find other things to do besides marking time. And if he should interrupt his counting to make admonitions or corrections, it is more difficult to hit the proper count when he wishes to resume the counting, after an interval, in order to steady the rhythm. If he begins from the beginning each time, or at any count not the correct one, there is no point to continued counting. Finally, most of the numerals above six are not as well suited to convey stimulation or to influence the work by variation in tone of voice and enunciation as those below six. The only advantage of counting up lies in the automatic registering of the number of repetitions. When the customary method of counting up to sixteen (or twenty or twenty-four) is used, the discontinuance of the movement is also automatic, for unless the teacher substitutes for the last two counts an order for the repetition of this dose, or a change to another movement, the class will stop. Often the preparation for this will begin quite a few counts before the last, as shown by less extensive and vigorous movements, and even by the "premature" stopping of some individuals.

To stop a rhythmical, continuous movement by command is the only sure and logical way, whatever the method of marking time may be. But the kind of command used and the way it is given will vary, not only with the method of marking time, but with the character of the particular movement and of the work in general.

If the class is used to a certain number of repetitions and these are indicated by the count or by the music, a command is, as already stated, not absolutely necessary. But it would undoubtedly be better to have the understanding with the class that, unless a command to stop is given, the class is to continue doing the movement. To stop it at the end of the first or any subsequent series of repetitions is then a very simple matter. The word *"Stop!"* or "And *Stop!*" spoken instead of the last count or two, with only slightly raised voice, is usually effective. Many use the term *"Hold!"* or *"Halt!"*

To stop a continuous movement repeated an indefinite number of times in fast rhythm, marked only by an occasional counting

or other device requires a command given with a good deal of power and timed just right. There are two distinct kinds of such rhythmical exercises, each requiring its own distinctive command.

1. In such exercises as marching, running, alternate knee-upward bending, rhythmical jumping and dancing steps no intermediate or terminal positions are held. There is momentum, or rebound, and the body weight is continually being shifted from one leg to the other. This would make it extremely difficult, if not impossible, to stop immediately after the signal is given. For all such movements the command "Class *halt!*" is the most suitable. The agreement is made with the class that two complete movements are to be executed (three, in running) after the command has been given. The teacher should insist upon having this agreement strictly lived up to, and reserve the command "Class *halt!*" exclusively for exercises of this type. If used in other kinds of gymnastic movements there is apt to be confusion.

2. In exercises demanding at least a momentary retention of terminal and intermediate positions it is unnecessary to give much or any warning, such as is implied in the command "Class *halt!*" The body weight is more evenly distributed, the equilibrium is fairly stable and the momentum is (or should be) checked as the position is reached. To stop such an exercise a single word, spoken sharply, is usually sufficient. The word *"Halt!"* is not entirely satisfactory because of the possibility of confusion with "Class *halt!*" It is, however, effectively used by many teachers. The word *"Hold!"* is also commonly used and answers fairly well. Like *"Halt!"* it is somewhat inadequate because of the long vowel. Then, too, the word "Hold!" is very useful in admonitions to the class to emphasize positions while doing a rhythmical movement. It might very well be reserved for such purposes. The word *"Stop!"* with its penetrating "s" and short "o" seems on the whole the most satisfactory. If preceded by the word "and" the latter may be given on the preceding count, but this is not necessary. Both words may be spoken together in such a way that the "Stop!" coincides exactly with the arrival of the class to a given position, or is spoken just an instant before. The more definite the type of exercise, and the better the class is trained to hold positions, the later may the command be given. Shortening this little interval of time, or even eliminating it altogether and stopping the class unexpectedly in any position, may, indeed, be used as a device for stimulating a class to alertness, to greater steadiness and accuracy in main-

taining, temporarily, all intermediate and terminal positions. The pupils rather like being put on their mettle in this way from time to time.

Summary. To be effective as technical devices in gymnastic teaching, the commands must be selected with forethought and care. The terms used must be simple, brief and explicit. They should be in harmony with ordinary, correct usage of language, not bizarre or slovenly perversions of it. They should be given in a clear voice, sufficiently loud to be heard, but not shouted. The preparatory part should always be enunciated as distinctly as possible, the final part in a manner that will compel response. The pause between the two parts should rarely, with but few exceptions, be neglected, and never be of quite the same length in successive commands.

Variety in intonation of the preparatory command; in the duration of the pause, in the sharpness, pitch, inflection and force of the executionary command—all these serve not only to suggest the way the movement should be done, but also help to relieve and prevent monotony, enliven the work, inspire, stimulate and put life into a class. They make the work interesting as well as effective. While there is nothing so deadening and fatal to the success of a lesson as faulty, inconsistent, lengthy and too numerous commands, delivered in a monotonous voice, a skillful use of the commands may lift the lesson to a period of pleasant, interesting and spirited activity.

4. The Active and Relaxed Gymnastic Positions.

The commands most frequently used, next to *"Begin!"* and *"Stop!"* are probably *"Attention!"* and *"In Place Rest"* (*"Rest"* and *"At Ease"*). The intelligent use of these commands is of the utmost importance is securing and retaining the attention of the class, in eliciting promptness and unison of response to all other commands, as well as vigor and correctness of execution in the exercises. On the other hand, their misuse or lack of use are conducive to slackened interest, poor fundamental position and incorrect execution. The proper response to these commands, therefore, should be worked for and insisted on, and should be secured at all hazards. Perhaps no other single item of the technique of teaching is as sure a test and index of the teacher's hold on the class or of the pupils' attitude toward the work as their response to the command *"Attention!"* The promptness and vigor of the response to this command determines to a considerable extent the spirit and quality of the work as a whole.

The active or fundamental gymnastic position, or position of attention.

This is in many respects an exaggerated position. It should be made clear to the class that it means something more than merely standing in an easy, "natural" position, even though this may be fairly correct and acceptable from an æsthetic standpoint; that it means something more than mere attentiveness, however complete this may be. The fundamental gymnastic position—whether assumed on the command *"Attention!"* from the relaxed position, or on the command *"Position!"* from any other gymnastic position, or at the end of a serial movement—involves hard work of both mind and body. It implies, of course, alertness, readiness to think and to do, and the nervous tension that this calls for. But, besides, it should be so defined as to demand hard muscular work, work of a kind and in directions largely neglected in ordinary activities—static contraction of those muscular groups of the upper back and abdomen which are habitually relaxed or subjected to passive tension. It is on the control, tone and endurance of these muscle groups that good posture ultimately depends. The fundamental gymnastic position should be considered an exercise for good posture. Indeed, maintaining a good fundamental position while walking or doing any other exercise is perhaps the most effective way of permanently improving posture. Hence the importance of starting every gymnastic movement from a good fundamental position.

When the command *"Attention!"* has been given and a prompt, satisfactory response obtained, it is well for both teacher and class to hold the fundamental position a moment before proceeding with the next exercise. Following the less constrained bodily and mental attitude and the buzzing of conversation permitted in the relaxed position, such a brief period of rigid immobility and silence emphasizes the contrast between the relaxed and the active position; it gives opportunity for some "belated" pupils to get their attention focused, and so helps to steady a class. For similar reasons the fundamental position should be held a second or two at the end of a gymnastic movement, before the command for the next exercise or for the relaxed position is given.

On the other hand avoid holding a class motionless in the position of attention longer than necessary. Immobility of any kind is always difficult and irksome. The nervous tension of expectancy, as well as the muscular strain demanded in the fundamental position, makes it particularly severe on the pupils who are willing and able to hold a strong position; while those who are

disinclined to sustained mental and bodily exertion, or who lack the requisite endurance, training and understanding of the work, very soon begin to show signs of diminishing muscular effort and dispersed attention. In fact, it is next to impossible to keep the whole class in the extreme position of attention very long. Any attempt to do so, whether intentional or not, will almost invariably result in partial relaxation, muscular or mental, or both, on the part of many members of the class. This either means going on and accepting a faulty position and imperfect attention, or it necessitates giving the command *"Attention!"* once more. The former leads to poor work, the latter is equivalent to repeating a command because it has been ineffective the first time. That would be a confession of weakness and would tend to lessen the teacher's control. Both procedures are pedagogically undesirable. The best thing to do when the first command *"Attention!"* fails to evoke an acceptable response, or when any considerable number of pupils relapse to a state of partial inattention or poor fundamental position, is to give *"In Place Rest!"*; then immediately, or after a brief admonition, command *"Attention!"* in a way to compel a sudden and emphatic assumption of the fundamental position. During its momentary retention the teacher has time to scan the class and make sure that every pupil is erect and attentive. Then, and not until then, give the command for the next exercise. In the beginning of the lesson it may be necessary to repeat this procedure several times before a good result is obtained. (Especially is this true of an untrained class.)

It is a very common mistake to give explanations or descriptions of exercises or lengthy admonitions while the class is in the position of attention. These, unless very brief, should be made while the class is standing at ease. To secure the pupils' attention at any time when they have been allowed to relax to a considerable extent and there is more or less talking, etc. (such as might be safe to permit), command *"Class Attention!"* Then give *"In Place Rest!"* and begin speaking as soon as this last command has been executed. The attention of the pupils will be retained while they are formally relieved from the muscular strain of the rigid fundamental position. As soon as the explanations, etc., have been made the teacher should at once command *"Attention!"* If he has succeeded in holding their attention while speaking and no opportunity is given for mind wandering or complete relaxation the class should be readily brought to the fundamental position.

Occasionally it may be expedient to make an exception to what has been stated in the foregoing paragraphs and deliberately hold the class motionless in the fundamental position for some little time. It may be done, for example, when the majority of a class

has responded to the command *"Attention!"* in an acceptable manner, while a few members are so deeply engrossed in conversation or "day dreaming" that they fail to hear the command. It is then amusing to the rest of the class to see the delinquents, often with some embarrassment, gradually wake up to the fact that everybody else is ready to go ahead and only awaiting their belated "arrival." The moral effect on the class as well as on the inattentive members is apt to be good. While in one sense it is an unjust hardship on the majority, there is usually enough of the humorous element in such a situation to redeem it. It is safest to keep it on that plane. The teacher may contribute to this by standing himself at rigid attention, indicating by a quiet word or two, or by looking significantly at the culprit, the purpose of the prolonged delay. But do not resort to this expedient too often, nor continue it too long at any time. If overdone the class might fail to enter into the spirit of it, and the effect might be opposite to what was intended.

The relaxed gymnastic position.

This may be defined as a partial relaxation from the muscular strain and nervous tension of the active gymnastic position. It is assumed on the command *"In Place Rest!"* (*"Rest!"* or *"At Ease!"*). To a certain (agreed upon) extent this command also signifies temporary relief from the restraint of formal class discipline. The relief does not begin, however, until the movement leading to the position has been executed. This should be considered a gymnastic movement and treated as such. Insist upon having the command responded to like any other gymnastic command—with promptness, precision and unison. Only when that has been done is the class allowed to relax.

The customary movement consists in advancing one foot diagonally outward or directly sideways. If diagonally, the weight remains on the stationary foot. Many teachers require that the right foot be advanced so that the body weight may rest on the left foot, on the theory that this reverses the habitual easy standing position (with the left foot out, the right hip projecting and the spine convex to the left) assumed by the average person. Encouraging the opposite position would tend to correct any slight lateral deviation of the spine. This may be a matter of opinion, and it probably makes but little, if any, difference which foot is advanced, provided that all move the same foot in response to the command. When that has been done it is advisable to allow the pupils to stand as they please, so long as they retain their places in the line and do not assume an outright faulty posture in the upper part of the body. As to the degree

of mental relaxation—whether, for example, conversation is to be allowed—that is a matter for the teacher's judgment and will depend upon circumstances. With a well-behaved class considerable latitude in this respect is usually safe. If abused, so as to lead to noise and disorder, the privilege may be curtailed or withdrawn, temporarily at least. Any tendency in this direction must be watched for and promptly checked. One way to check it is to make the periods of relaxation rather brief and also less frequent. If the class is made to work as hard and as rapidly and for as long periods as is consistent with safety, there will not be much desire for mischief when a rest is given.

The technique of using the relaxed position, while not difficult, is often faulty because of mere carelessness. Teachers, as well as classes, are prone to forget that the command *"In Place Rest!"* is really a gymnastic command and calls for a specified movement. Not only is the teacher apt to accept a poor response to this command, but he often brings it about by giving the command in an ineffective manner—hurriedly, without any particular intonation, as something not meaning a great deal, in parenthesis as it were, not expected to elicit any definite response. It is a habit even experienced teachers readily fall into.

Beginning to speak to a class before the command has been properly executed is another very common cause for poor response. It usually goes together with an ineffective command. Both faults tend to weaken the teacher's power of command and his hold on the attention of the class.

Many teachers do not use the relaxed position at all. That is, they do not give the command *"In Place Rest!"* (or its equivalent in other terms). But the class will relax more or less of its own accord whenever there is a pause in the lesson. The command *"Attention!"* is then also frequently neglected. Whether these commands are given or not, slackness or neglect in the use of the relaxed position is usually associated with listlessness or poor posture, or both, in the active position. For on the proper use of the relaxed position depends to a large extent the degree of success attained in securing and maintaining a good active position—mental and bodily. Making the contrast between the two as striking as possible and the transition from one to the other sharp, sudden and uniform is conducive to good discipline as well as good spirit and quality of work.

Simply forgetting to give *"In Place Rest!"* when the teacher really knows that it should be given is a fault often seen. A little watchfulness and practice will soon overcome this habit. On the other hand, the use of the relaxed position may be overdone and very often is, even by experienced teachers. A few suggestions as to its use may be helpful.

When to use the relaxed position. (1) When actually needed by the class after hard work. This means that the work shall have been of a character and duration to make a short rest appreciated. Signs of such need should always be watched for and noted by the teacher. He may judge by the vigor of the work, the color and expression of the pupils' faces, hard breathing, the heaving of a sigh at the end of a movement, etc.

(2) When speaking to a class; when making explanations, descriptions or demonstrations of exercises, or making general (verbal) corrections of a lengthy character when the first attempt of a movement has not been satisfactory.

(3) When making individual corrections in a way that takes some time and cannot well be done while the class is working. Also when wishing to reprove or speak to an individual about any matter which does not concern the whole class. But it is not wise to do this very often.

When not to use the relaxed position. (1) In a perfunctory, routine way, between every movement, whether needed or not.

(2) For the teacher's convenience, while he is trying to think what to do next, or is absorbed in a lengthy study of his memorandum, etc. Such practice not only needlessly interrupts the work, but puts the teacher in an unfavorable light before the class. Pauses of this kind are always more or less embarrassing.

(3) When very brief explanations or admonitions are given.

5. INSTRUCTION.

Under this head may be grouped those procedures which make up the positive side of teaching, such as presentation or explanation and demonstration of exercises; cues, admonitions, stimulations and warnings, either before the exercise is started or during its progress: devices for guiding or modifying the rhythm, for varying the speed or other features of the movement, etc. When, how and to what extent each of these are to be used will depend on the objects and character of the work as well as the general method of teaching.

Preparation. Before taking up the detailed consideration of the above topics it may not be out of place at this time to suggest that the teacher owes it to himself as well as to the class to be well prepared for each lesson. In the first place he should meet each class with a clear and definite plan of the lesson in his mind. While extemporaneous teaching may be indulged in occasionally, or for a short series of lessons, by an experienced teacher with safety and sometimes even with distinct advantage as regards animation and interest in the work, to do so habitually is, to say the least,

unwise. There is great liability to get into ruts, to use constantly certain types of exercises and to neglect other types which may be equally useful and interesting. The progression, too, is apt to suffer. But a general plan of the lesson (and preferably series of lessons) is not always enough in the way of preparation. If we wish a class to do an exercise correctly, the first requisite is that we know exactly what we want—that we ourselves have a clear idea of each movement. This is not always the case, especially with young and inexperienced teachers, and it usually means insufficient preparation. Not only is it advisable to commit to memory the names and order of the exercises, but it may be well to go through the movements—mentally at least, but actually is even better—before giving the lesson. Being fortified as far as possible by a thorough preparation the teacher will be able to put his whole mind on getting the work done satisfactorily, rather than in embarrassing efforts to think what to do next and how to go about it. It will also reduce to a minimum the necessity for frequent and lengthy reference to a memorandum.

Presentation or explanation and demonstration of exercises. Given a reasonable amount of willingness and coöperation on the part of the class, the first essential in presenting an exercise is to make the pupils understand exactly what they are to do, i.e., produce a clear, vivid image of the exercise in their minds. This may be done in several ways.

1. The exercise may be described clearly and concisely, using such terms as the class will readily understand. The important features are emphasized, the difficulties are pointed out and faults which are liable to occur are warned against. Suggestions regarding the kind of muscular efforts needed for correct execution may be made in terms of some familiar activity, thus bringing the imagination and the associative processes to bear on the new or difficult elements of the exercise. With children a teacher may go far afield in this respect and illustrate the movement in a great variety of ways appealing to the childish imagination. With adults he is more limited, but with a little ingenuity he will find abundant material for suggestive illustrations in well-known games and sports as well as in many forms of labor. For example, in giving such a movement as "Running in place with knee-upward bending" to a class of children the teacher may finish the brief description with the suggestion that the pupils do it "like a high-stepping horse." Or if giving a slow, resisted "Arm bending and stretching upward" to a class of older pupils the teacher may tell them to do the movement as if they were pushing up and pulling down a heavy weight.

The descriptive method of presentation is hardly ever sufficient, by itself, to produce a clear picture of the exercise, except possibly simplest kinds of movements or with very well-train Unless accompanied by more or less detailed demonstra- it is apt to be too lengthy, time-consuming and tedious, as well as inadequate. It involves too much talking in order to make every detail clear. It requires a closer attention and greater ability to understand than we have a right to expect from any class and tends to make the lesson too much of a mental drill.

2. Another method depends entirely on the demonstration of the (complete) exercise. Little or no description, explanation or suggestion is made. Counting as he executes each part of the movement before the class, the teacher may add some general direction or admonition regarding rhythm or vigor in the execution, then with a preparatory "All ready," and a final *"One! Two!"* etc., or *"Begin!"* (or even without any final command) the exercise is started.

This method has the advantage of simplicity and brevity. But it depends too much on unaided observation and visual memory If the exercise is unfamiliar or fairly complex, many pupils are likely to overlook important details and retain only an incomplete or faulty mental picture of it. Or they may fail to execute it correctly because without helpful suggestions they do not know how to make the right muscular efforts.

3. A third method uses the "Follow-the-leader" principle exclusively. As the teacher executes each movement, or part of a compound movement, the pupils *imitate* it as closely and as quickly as their interest, attention and power of coordination permit. The teacher usually counts, and for the first "round" or two does not expect or even attempt to get the exact rhythm or any semblance of unison. That would of course be unreasonable. But after a few repetitions the class gradually "slides" into the rhythm of the movement and may attain a fair degree of unison, especially when accompanied by music. The method is employed extensively in teaching dancing. Many teachers of gymnastics use it inadvertently, or from a mistaken desire to help a class, or as a misapplication of the principle of "cues," when trying to give single movements on command. By doing the movement *while giving* the final command, *instead of after* finishing it, they induce the class to do likewise. This may be carried to such an extent that the class follows the teacher's movement by direct imitation without paying any attention whatever to the command. The latter might just as well be dispensed with. When used in this way the method has nothing to recommend it. It usually means ragged work and often leads to mis-

understanding and dissatisfaction. This has already been pointed out in the discussion of gymnastic commands.

When skillfully employed, however, the method may serve well enough in some forms of rhythmical gymnastic work of a more or less indefinite character and approaching the dancing type. It may be useful under certain circumstances, as, for example, when teaching very young children, or classes of adults in which it is desirable to eliminate as far as possible the purely mental work.

On the other hand this method is wholly inadequate when it is desired to give work of the definite type with a view to increasing the power of conscious or volitional motor control. In such work the pupils are required to construct their own motor images or to reproduce, after a varying interval of time, a movement which they have been shown. This might be called *volitional* or *deliberative reproduction,* and is a more complex process than the immediate or *perceptual imitation* which the third method calls for.

The methods of presentation most used, because giving greatest satisfaction from all points of view, are combinations of the first two described, viz., a descriptive explanation accompanied by a more or less detailed demonstration. The proportion of each will vary with different teachers, with the style of work taught as well as with the conditions under which the work is carried on. The total amount of instruction required for each exercise will of course depend on the stage of progress of any class and its familiarity with a given exercise or the elements of which it is composed. With well-trained classes and rational progression a considerable number of movements require no other presentation than a descriptive command, at most accompanied by a "cue."

Cues. The detailed instruction given when presenting an exercise may, as stated, be replaced by a "cue." The word is used here to mean a quick or fragmentary representation of the exercise, neither complete nor accurate enough to be called a demonstration, and serving merely as a reminder or suggestive indication of a movement with which the class is supposed to be familiar. *It is given as the preparatory command is being delivered.* It insures the correct interpretation of the command by all the (attentive) members of the class and aids in their construction of the "image" of the exercise. When the movement is compound and fairly complex, several parts of the body moving simultaneously as well as successively, the preparatory command, if descriptive, is usually quite long. In that case there is time, if occasion calls for it, to make the cue sufficiently detailed to amount to a rapid demonstration, finishing it just before the

final command is given. Cues of this kind are very useful as time-saving devices. The extent to which they may be used depends, like every other feature of the instruction, on the progression and the stage of advancement of the class.

The term cue may also be applied to suggestive reminders—movements by the teacher accompanied or not by admonitions—while a rhythmical movement is in progress. They are particularly useful in the more complex combinations of movements, such, for example, as charges or lunges combined with dissimilar arm movements and even trunk and head movements in opposite directions.

Cues are also used to assist a class in going through memorized gymnastic drills, in the same way as when teaching dances. As the class is executing the last part of one exercise, the teacher indicates the next by a movement varying in extent from a slight gesture to a complete and exact demonstration of the first part of the next exercise. Such a movement takes the place of a verbal reminder when a suitably brief and concise term is lacking, or when the music or noise made by dumb-bells, etc., might make it difficult for many pupils to hear.

Admonitions and stimulations. Admonitions may be given as a part of the presentation, or as supplementary instruction. In the latter case they may follow the presentation directly, serving to emphasize or reënforce some essential point already made, or adding another. For example, after demonstrating and explaining such an exercise as "Alternate arm flinging sideways-upward with opposite leg flinging sideways" the teacher may add: "Remember to make the down-stroke just as vigorous as the up-stroke." Or admonitions may be given after the class has assumed the position of attention and the command for the exercise is about to be given. They may even be made a part of the preparatory command. Giving the rhythm for a continuous movement or restating it may serve as examples of the former; indicating the speed of the movement—by some such word as "Slowly" or "With utmost speed," etc.—as examples of the latter. In either case the admonition should be as brief as possible, in order not to hold the class immobile too long in the fundamental position.

When each movement, or part of a compound movement, is done on command, the short periods spent by the class in holding positions may be utilized by the teacher in giving further or repeated admonitions regarding the execution of the next movement, as well as in correcting the position or criticising the movement by which it was reached. Such admonitions are often of a warning character, asking the class to look out for some fault

or shortcoming apparent in the execution of the preceding movement. They are then somewhat in the nature of corrections, and if given in the right way—in a spirit of helpfulness—are very effective. Here again they must be brief and to the point, for the pupils are (or should be) working hard holding a gymnastic position often even more fatiguing than the fundamental position.

Finally, admonitions find their greatest field of usefulness when the work consists of rhythmical, continuous exercises. Even when the rhythm is smooth and uniform and there is little or no effort made to hold positions, an energetic teacher will find occasion for frequent admonitions. But when exercises of a definite type are done serially or continuously, with syncopated and often broken or undulating rhythm, and the intermediate as well as terminal positions are held a varying length of time, then admonitions constitute a large and most important part of the instruction. Here they are often of necessity in the form of warnings and corrections, but even more frequently they are, or should be, of a positive character—suggestive, stimulating. To maintain a rhythmical gymnastic exercise on the plane of conscious, volitional effort, to keep it from becoming an easy "mechanically" executed movement—a purely reflex action without much or any conscious coördination or effort—requires constant and varied stimulation. A wide-awake, enthusiastic teacher may find it to advantage to keep up a continual stream of stimulating admonitions, now directed to one part of the class, now to another, but more often addressed to the whole class. Such stimulation may be needed to steady the rhythm, to slow it down or to accelerate it; to increase the speed in one movement and to decrease it in another; to get the class to try for more precision, more vigor in the execution; to insure the holding of positions longer and with greater steadiness, more perfect weight distribution; to aid the class in beginning and finishing each movement with more accent and with better unison; to remind the class of agreed-upon signals for and different methods of stopping the exercise, etc. There is no limit to the variety of form and the degree of intensity of such stimulation. While a partial list might be made of expressions actually used by various teachers in stimulating classes, it is doubtful if it would be of much value, except as suggestive material. Any attempt to use such a list—verbatim—would be in the nature of imitation, would, therefore, with difficulty be made to appear spontaneous, and consequently would be more or less ineffective. Again, general use of language and special terms suited to one class might not and, in fact, rarely would, be suitable to another class. Each teacher must depend on his own ingenuity, inspiration and sense of fitness of things to hit on adequate and appropriate methods of

stimulation. Some general principles regarding the use of stimulation may, however, be suggested.

1. As in the case of discipline, so with stimulation: never use any stronger means than is necessary to attain the desired end. With a new class, unaccustomed to the teacher's ways or to the kind of work he is to give and with the spirit of willing coöperation often shown in the beginning, suggestions expressed in moderate terms without great intensity of voice may be sufficient. Such moderation in the beginning is usually the wisest course for two reasons: At first there are a great many details in the work calling for the use of stimulating admonitions. Some discrimination must be used in treating each according to its relative importance. Second, as the work progresses its quality is expected to improve, and if the strongest measures have been used to attain mediocre results, how are the finer and more difficult distinctions and effects to be obtained? Besides, as the pupils become accustomed to a teacher's methods of stimulation they naturally grow less sensitive and responsive to them. This makes it necessary for the teacher to use constantly new forms of expression, and, up to a certain limit, with increasing intensity and power in order to be effective. For these reasons it behooves a teacher to husband his resources, always keeping something in reserve; to be patient and not expect everything at once; to be satisfied with a fair degree of responsiveness, alacrity, speed, unison, etc., at first and trust to the combined effects of the work and his whole teaching (supplemented by gradually increasing stimulation) for further improvement in the quality and finish of the work.

2. In apparent contradiction to the above, it may sometimes be wise to use extravagant terms of expression (not at too early a stage, however). It may be justifiable if such terms are of a particularly suggestive character and especially if they are at the same time more or less humorous, either by virtue of their extravagance or otherwise. For example, when trying to stimulate a class to greater effort and wider range of movement in the exercise "Alternate knee upward bending" it may be permissible to use such an admonition as "Try to touch the chin with the knee without ducking the head forward" even though in a literal sense such a thing is an impossibility. The class soon finds this out, if it does not know it before, but that does not detract from the effectiveness of the suggestion. The pupils usually take such a thing humorously while responding as desired to the implied stimulation.

3. Most admonitions may be increased in their effectiveness by being timed so as to coincide with, or only slightly precede, the particular movement or position for which they are intended.

They must then be given very quickly. This requires some skill, but with a little practice any one may learn to do it. Examples of such timing are the admonitions for varying the speed of a movement given at the end of the preceding; or "Hold it a moment" spoken just as the class arrives in a position. "Cues" and verbal reminders of the next movement in any exercise composed of several dissimilar elements are timed in much the same way. Intercepting a movement in this manner is very effective, if skillfully done.

6. Correction.

This is one of the most important parts of teaching and one of the most difficult. It is complementary to instruction and in one sense may be considered the negative side of teaching. On the promptness, effectiveness and tact with which corrections are made depends to a large extent the quality of the work obtained from the pupils as well as their attitude toward the work, their ideals, standards and general conceptions of it. Corrections, general and individual, may be so made that the majority come to hate both the work and the teacher; or they may be made in a way to stimulate, to arouse interest in the work and *esprit de corps,* as well as respect and regard for the teacher. The principle of learning by repetition of acts, discarding those that are wrong and retaining in memory those that are right, and gradually forming habits of doing things in the right way, is absolutely dependent on correction. "The teacher must stamp out the wrong ones and stamp in the right ones," as Thorndike so tersely puts it.*

To be able to correct at all, it is of course absolutely necessary for the teacher to know when correction is needed. He must have a clear idea of what can be accepted and what cannot, as well as tact and judgment enough to know when to correct and when to refrain from doing so. What, when and how to correct depends on circumstances and conditions to some extent and also on the objects and aims of the work under any given conditions. It would make a great deal of difference, for example, whether the class is that of a mother's club in a Settlement, of second grade children in a public school, or boarding school girls between the ages of fourteen and eighteen. It must always be borne in mind that the standards we set ourselves are relative in this, as in most respects.

While having in his mind a definite and high, but reasonable, standard of the work, based on his conception of its purpose,

* E. L. Thorndike, "Notes on Child Study."

scope and adaptation to given conditions, the teacher must use constant judgment and discrimination in correcting. For if his standards are high and his observation keen, he will find a great deal to correct, especially in the beginning or when giving a new and difficult exercise. The important things, the main essentials, should receive attention first, and finer details be left for another occasion, when by practice and repetition the class has learned to do the exercise in a way that insures the accomplishment of its main objects. For example, when posture and general motor training are of prime importance, the position of head, chest, shoulders, lower back and often of the arms, the inclination of the body, etc., should be corrected first, and minor details, such as the position of fingers, wrists, feet, etc., later. When the immediate organic effects are aimed at primarily, the vigor and magnitude of the movement, its rhythmic swing and continuity, will form the main theme for correction or rather for stimulating admonitions. Other details are then of secondary importance.

Keen power of observation, natural and trained, is a necessary qualification in teaching and should be cultivated and striven for. On the teacher's ability to see errors depend both the quality of the work and the discipline. Accepting slovenly or faulty work at once lowers the standard of excellence which the class feels the teacher demands, and less effort will be made to approach perfection. If faults are not seen, the pupils may either think that they are doing the exercises satisfactorily; or, as often happens, especially with children (if they know that they are not doing things correctly), they form a poor opinion of the teacher's power of observation, think he is "easy," and will promptly take advantage. The teacher should try to notice everything—rhythm, exactness and vigor of execution, promptness and unison of response—and in some way let the class know whether satisfactory or not. By timely comment and individual correction every pupil is thus made to feel that he is observed, that nothing escapes the teacher's notice. It is well to make a practice of systematic scanning or inspection of each line or portion of the class during the execution of every movement. In time such systematic observation will become habitual.

To facilitate systematic observation, the position of the teacher relative to the class and the distribution and formation of the class on the floor should be given careful consideration. (This has already been discussed in a previous chapter.) For example, a faulty forward bending is very readily seen if the class is in a rank (front) formation and the teacher views it from the end of each rank; an oblique charge is perhaps best observed from a file (flank) formation, the teacher again viewing it from one end, preferably facing the class.

Causes of Faults. The method and manner of correcting, as well as the amount and kind of correction, will vary with the nature and causes of the faults and shortcomings. It is, therefore, necessary that the teacher be able to judge or ascertain surely and quickly such causes. The following are some of the more important:

1. Insufficient, unclear or faulty instruction and demonstration. This is a not uncommon occurrence, even among good teachers. Especially is this true as regards demonstration. A teacher may not be aware of habitual slackness in this respect unless somebody calls his attention to it. It may put him in an embarrassing position before the class, if he finds it out at the time, especially if he has reproved the class for not doing the exercise correctly. If he remains unaware of the fact, the class, or some of its members, may misconstrue his criticisms or doubt his sense of justice. One can never be absolutely sure of perfection and therefore it is wise occasionally to admit to the class that the exercise as demonstrated may not be correct in every particular.

2. The instruction and demonstration may have been correct, sufficient and clear to the majority, but some may not have seen, heard or understood everything. These may, therefore, have a wrong picture of the exercise in their minds and execute it in a faulty manner. It is wise for the teacher to assume this to be the case nearly always, particularly when not absolutely sure of the cause. It gives the individual (or class) the benefit of the doubt and is not likely to produce resentment, because it implies that perhaps the teacher was at fault. The same principle may be applied in a broad way to all kinds of correction—individual and general; in class and out of class. It is a good mental attitude, conducive to friendly relations.

3. Again, faults may be due to actual inability on the part of a class or individuals. Such inability may be dependent upon lack of coördination. This is the most common. If this applies to great numbers, simpler work rather than much correction may be the best course. Structural defects and peculiarities are often causes of poor work, e.g., tightness around the shoulders, pronounced round or hollow back, lateral deviations of the spine, flat or otherwise deformed chest, shortness of hamstring muscles, etc. In such cases special work as well as encouragement and stimulation may be helpful. Not infrequently a faulty execution may be due to some temporary disability, as lame ankle, knee or shoulder; or to general fatigue, malaise or poor condition. The teacher must be quick to notice signs which point to any one of these possibilities, so as to avoid being unjust. Of course, pupils

may have some cause using the matter with them and for reasons of their own try to make the most of such disability. Then the teacher's judgment and resourcefulness must determine the best way to deal with the case. But be charitable when judging doubtful cases.

4. Inattention may be and often is the cause of faulty or slovenly execution. When sure of it the teacher should show that he is aware of the fact by disapproval of some kind. But if not sure, be slow to assume it. Rather put it down as being a case of failure to understand. Find out if the pupil's hearing is good.

5. Mischievousness. The same applies to this as to the preceding. If you have a clear case, it may be wise to deal with it peremptorily, even if the offense is relatively small. "Nip things in the bud" is always a good rule in preserving discipline.

Summary of methods of correcting.

I. General corrections (addressed to the class as a whole).

1. The presentation, as already suggested, may well include warnings against the faults which are most likely to occur. Do not, however, unduly emphasize or dwell too much on possible faults. Rather make any such warning serve as the shading or contrast by which the positive parts of instruction, the essential points in the picture, are made more vivid.

2. A warning admonition may be given as a part of the preparatory command, e.g., "Without letting the head (and elbows) droop(Trunk forward—*bend!*" This, so far from suggesting the fault, puts the pupils on their mettle to avoid it.

3. Admonitions of a corrective character may be given during the exercise. This form of correction is particularly useful in continuous, rhythmical movements. The teacher may increase the effectiveness of such admonitions by doing the exercise with the class in an energetic manner, even exaggerating the correctness and vigor of the execution, if that were possible. In this way he can throw a great deal of suggestion into his admonitions. Here also it may be wise to illustrate the fault, by way of helping the understanding of the class.

4. General corrections and admonitions may be given while a gymnastic position is being held. This applies especially when doing single movements on command. This method should always be tried before resorting to individual correction.

5. Stopping a rhythmical movement and giving the class "In place rest," then reillustrating and reëxplaining the movement, making admonitions more emphatic and demonstrations more careful than the first time.

6. Recalling a compound movement before the completion of the first cycle, if the teacher judges that it is too difficult for the average ability of the class, and, after making the necessary explanations and admonitions, beginning all over, or giving only a part of it, or substituting something else less difficult.

II. Individual Correction:

1. By admonitions while the movement is being done, or while the position is being held. The attention of the individual may be secured by naming him, if necessary, or by catching his eye and then by look or gesture, etc., making it clear that the admonition is directed to him.

2. By assistance and manual correction during the exercise. This is often a delicate matter, but is seldom resented when accompanied by admonitions in an undertone, given in a decidedly friendly manner, making it clear that you are simply trying to help the pupil. If the teacher has the right mental attitude the pupils generally appreciate such efforts rather than the reverse. They are keen to judge this attitude, however, and if the teacher's manner while thus correcting is peremptory—suggestive of bossiness or impatience—or if the manipulations are at all rough, they will show their resentment in one way or another. Such failure of appreciation may be expressed by resisting, or by doing worse than before, or by making no effort at all, or by discontinuing the movement and perhaps looking annoyed and even resentful.

3. By showing and explaining after the class has finished the movement, so that the individual will be able to do better next time.

4. By stopping the class and giving "In place rest" while helping the individual, then letting the class continue the movement. This procedure is not very advisable. The teacher must be sure of his class, for interruptions of this kind are apt to lead to slackened attention and loss of interest. Do not resort to this expedient often, and always be as quick as possible about it.

5. By helping an individual after class, especially if the general quality of his work is unsatisfactory. The teacher can then ascertain the causes of poor work by careful questioning and, if dependent on wrong mental attitude toward the work, can set this right by speaking to him in a way to make him understand the purpose and catch the spirit of the work.

General corrections and admonitions are to be used in preference to individual, even when only a few are at fault. In that case try to make the individuals in question know that the admonitions are intended for them.

When a considerable number do the exercise in a faulty manner, stop the movement, give "In place rest," redescribe and illustrate both the correct and faulty way of doing it.

When making individual and especially manual corrections, do not forget the class. If a gymnastic position is being held many pupils will become too tired to maintain it (or simply take advantage of the teacher's momentary "absence"), and all are liable to relax somewhat if the position is held too long. There will then be more and more to correct. Rather make rapid correction of a few, let the class return to the fundamental position, then repeat the same exercise and correct a few more. If the class is doing a continuous movement, keep an eye (and ear) on the class while assisting individuals. From time to time give a general admonition, steady the rhythm by counting through a few movements, etc., then resume work with the individual. Too much should not be attempted in this direction, however, both on account of the difficulty to make clear (quickly) to the individual what you want, and because of the liability to forget the class. Sometimes it may be wise to let the individual stop, then put him through the exercise slowly once or twice, the class in the meanwhile keeping on. But this is risky unless the class is exceptionally reliable and well trained.

The technique of manual correction. How to take hold of a pupil and by pressure and counter-pressure, assistance and resistance, put him in the right position or guide him in the execution of the movement is quite an art in itself and must, in the main, be acquired by experience. In each movement and position various faults are likely to occur, and each requires its own method of manual correction. A few general principles may perhaps be stated and the "holds" in some of the more common types of movements and positions described.

As a rule stand behind or on one side of the pupil, rarely, if ever, in front. When approaching from behind, make a point of speaking to the pupil before touching him. Give some admonition, make some comment or simply say, "Let me help you get this right." Whatever form such warning may take, be sure to make the pupil feel that the purpose of the manipulation is to help him. If the teacher really has a friendly mental attitude and goes about it in a brisk and business-like manner, manual corrections will rarely be resented.

When trying to correct one fault, be careful that the necessary yielding and adjustment of one part of the body—as arms, head, knee, foot—do not induce a faulty position or an undesirable movement in another part, or disturb the body equilibrium.

Use a firm and steady touch, not too sudden and never with such force as to suggest roughness. Avoid touching the pupil's

face, but if necessary—as in correcting a forward position of the head—use the finger tips only.

When the pupils' arms and shoulders are bare, refrain from manual correction if the hands are very cold. Wait until they are warmed up by exercise and friction.

Do not persist in the use of manual correction if a pupil is excessively ticklish. It only makes matters worse.

Be careful not to mistake natural limitation of mobility for resistance on the part of the pupil. In general, do not resort to manual correction until other means have been tried and found unavailing.

When trying to put a pupil in correct position the teacher may find that two hands are not enough. To steady the pupil and localize the movement properly by pressure and counter-pressure, he may have to use his elbows, shoulders, head, chest, hip, knee and even foot. The following methods of manual correction of common faults in a few representative types of exercises have proved effective and may serve as illustrations.

When doing an arm stretching or flinging upward, pupils often fail to bring the arms far enough back. To assist them in reaching the correct final position the teacher should stand on the pupil's left (or right) side and a little behind; the left forearm is then placed across the pupil's arm in front and presses backward, while the right hand is placed between the pupil's shoulder-blades and presses forward.

To correct the position reached by placing the hands behind the neck, the teacher, standing behind the pupil, grasps the latter's elbows and pulls backward, at the same time exerting counter-pressure by gently pressing his own elbow or chest against the pupil's shoulder-blades.

The same procedure may be used in correcting the position reached by forward bending of arms, or arm raising sideways.

When a forward position of the head accompanies a faulty position of the arms in the above movements, the teacher stands at one side of the pupil (left), his left hand grasping the pupil's right elbow (or arm) from the front, his left arm or forearm pressing the pupil's chin backward, his left shoulder or chest (or his head) pressing the pupil's left elbow (or arm) backward, while his right elbow and hand exert counter-pressure against the pupil's shoulder-blades and occiput.

To correct a faulty position of head only, with chin protruding, place the finger tips of one hand on the pupil's chin, pressing firmly backward and upward, while steadying the pupil's head with the other hand placed on the occiput.

Side bending of trunk with the hands on hips or behind neck, overhead or in one of the cross positions (side horizontal) is often

executed with a rounded back and forward positions of arms and shoulders, a bend at the hips or twist in the body. Whether one or several or all of these faults are present, the movement may be corrected by grasping the arms or shoulders from behind, pulling backward (or twisting, as the case may be), while the pupil's equilibrium is steadied by the opposition of the teacher's chest or hip.

A faulty forward bending of trunk (with the arms in any of the high positions) is corrected from the side, the teacher stooping down and placing one arm in front of the pupil's arms or shoulders, the other on the pupil's shoulder-blades, in a way similar to that described for correction of faulty position of the arms.

An oblique charge requires the same method as far as the position of the back and arms is concerned. Insufficient bend and forward position of the advanced knee of the pupil as well as unduly arched back require a stronger forward and downward pressure by the teacher's hand on pupil's shoulder-blades, while the teacher's knee forces the pupil's knee out into the correct position. The teacher may even find it necessary to use his foot in pushing the pupil's foot to the proper position.

The leaning forward so common in knee bending may be corrected by the teacher taking hold of the pupil's shoulders (or arms) from behind and pulling him backward against his hip and thigh, then releasing his hold gradually as the pupil becomes accustomed to "leaning backward" and his sudden, exaggerated efforts to steady himself are replaced by more moderate and better coördinated contractions.

Excessively hollow back, whether it is the habitual posture, or is associated (as is only too often the case) with gymnastic movements and positions calling for vigorous contraction of the upper back and shoulder-blade muscles, is very difficult to correct by any means whatever. The following method has been found helpful when accompanied by admonitions to retract the abdomen and push the hips forward. The teacher, standing on one side of the pupil, places one hand on the pupil's abdomen, the other on the pupil's sacral region, and his head behind the pupil's shoulder-blades. By pressure and counter-pressure at these three points the pupil may be helped or gently forced into the correct position. It may be necessary at first to ask the pupil to relax all his back muscles. This usually leads to a rounding of the upper back and a collapse of the chest and shoulders. But by careful muscular efforts erect posture in the upper part of the body may be regained, while a relatively straightened position in the lower back is retained. If the first attempt fails, try it again.

By repeated attempts with assistance the pupil will gradually learn to localize his muscular efforts to the upper part of the back and the abdominal region and in time be able to assume the correct position without assistance.

7. Review and Summary of Methods of Teaching Different Types of Work.

In discussing the various phases of teaching from a technical standpoint frequent reference has been made to the necessary modifications and variations of method according to the style of work taught, the objects aimed at and the conditions under which the work is carried on. With style of work is meant the general character of the exercises, such as their relative simplicity or complexity—the number and kind of elementary movements of which they are composed, the kind of combination, the sequence and alternation of these elements—the amplitude, speed, power, rhythm, etc., of the exercises; the relative emphasis on sustained position or on continuity of movement.

While no sharp lines of differentiation can be drawn, it may simplify discussion to refer all exercises to one of two types: indefinite and definite. These terms are admittedly inadequate, for while retaining their ordinary connotation they are also used here to express a number of differences in character and quality of gymnastic exercises. Such differences of quality are often relative and partial and are not necessarily inherent in the exercise. The same exercise may approach one type or the other at different times according to the way it is defined and executed. Again many exercises have some characteristics of each type.

1. *Exercises of the indefinite type* are relatively complex, widely distributed movements, not readily capable of sharp definition or standardization; their various elements are so blended and interdependent that the exercises cannot easily or to any great extent be divided into component parts without destroying or at least changing their character. They are usually continuous, i.e., the movements are repeated in rhythmic alternation and sequence, not separated by sustained positions. The momentum or recoil of one movement gives the impetus for the next, or one movement begins before the preceding is completed. Typical examples are walking, running, jumping, throwing; rocking, swaying or undulating movements. Such exercises may approach the dancing type, being then usually of moderate range and speed, the movements flowing smoothly one into the other. Or they may be oscillatory movements—swinging, thrusting, revolving or circling—of considerable amplitude, speed and power, such as con-

tinuous large arm swings or circles; quick arm bendings and stretchings; some forms of knee upward bendings and leg flingings; circumduction of trunk, "chopping," "paddling" and similar mimetic exercises; combined stooping and trunk twisting or bending with or without arm movements, etc.

Many such partly or wholly "indefinite" movements are extremely useful and valuable exercises. For in the first place their complexity usually implies wide distribution of muscular work. If executed vigorously they represent large total quantity of muscular contraction without too great local fatigue. They are correspondingly effective in stimulating the circulatory, respiratory, digestive and excretory organs as well as all parts of the heat-regulating mechanism—production as well as elimination—with all that this implies. The fact that such exercises are usually done with rhythmic continuity emphasizes their general organic effects. If the repetitions are numerous and little or no rest is given between the exercises—as in memorized drills—there may result considerable gain in endurance. If the exercises are quick rather than powerful, increased capacity for speed of muscular action will undoubtedly be gained. Nor can any kind of consciously executed movement be practiced persistently without yielding some result in the way of subjective motor control. Many "indefinite" or "semi-indefinite" types may be of considerable value in this respect by demanding frequent changes of weight distribution, by offering difficulty of balance, of sequence and alternation. Most of their values, however, depend on wide distribution, numerous rhythmic repetitions and continuity of the muscular work. Some of them depend on the fact that practically every specified movement consciously performed is at least to some degree "definite" and to that extent demands and cultivates discrimination and volitional motor control.

The methods and technique of teaching the indefinite type of exercises are on the whole comparatively simple. The demonstration and the direct imitation methods, or combinations of these, are generally used. In the former case demonstration of the whole exercise, supplemented or not with explanations and directions for execution and rhythm, is followed by a preparatory "Ready" or "All together" and the movement is started, either by such a command as *"Begin!" "Go!" "Start!" "Now!"* or without any final command, a movement of some kind by the teacher, or the beginning of the music, taking its place. Whenever necessary and feasible, complex exercises are of course divided as far as possible, the component parts practiced separately, then put together and the whole executed as a compound movement.

During the progress of such a rhythmical movement the teacher can, if he wishes, give supplementary instruction and more detailed

directions. These usually take the form of admonitions, exhortation for greater speed, more vigor and snap, faster rhythm; sometimes they are intended to produce greater precision and better unison. They are then occasionally in the nature of criticism and correction. Quite often, however, the teacher merely marks the time by counting and depends for stimulation and suggestion on the tone of his voice, his animated manner and his example in the vigorous and correct execution of the exercise.

After a customary number of repetitions, as indicated by the count or by the music, the class usually of its own accord discontinues the movement. A command such as *"Hold!"* or *"Halt!"* or *"Stop!"* may or may not be given in place of the last count. Though not necessary, it is usually best to do so. If the teacher wishes further repetitions he may substitute the words *"Again"* or *"Once more"* for the command to stop, also given in place of the last count or two. Or he may start the next exercise in the same way, by naming it, with or without a cue, or by a cue alone, providing the class is familiar with the exercise. In this way a long series of movements and numerous repetitions may be done without any break of continuity, and marked organic effects may be obtained.

The direct imitation method differs from the preceding chiefly in the presentation and starting of the exercise. Instead of demonstrating the exercise as a whole while the class is standing still and observant trying to retain or reconstruct a mental picture of the exercise, as in the case of the other method, the class here follows immediately and as closely as possible each movement of the teacher. At first there is usually some uncertainty and not much unison, while the rhythm is slow and not very true. But with each repetition there is gradual improvement in these respects, until the movement is progressing smoothly with whatever rhythm the teacher desires. In this method music is of great assistance in securing unison and keeping the rhythm. It curtails the teacher's resources in other respects, however, especially in the effective use of his voice for purposes of stimulation and correction. In so far as some (and perhaps it would be fair to say many) of the teacher's duties and opportunities are delegated to the music, it becomes necessary to see that the right kind of music is furnished, so that the character of the work may be what the teacher intends. This can be done, but it is not always the case. Not infrequently the method of teaching, the selection and arrangement of the exercises and the character of the music are such as to make the work resemble dancing. It is then usually intended mainly to furnish gentle and pleasant exercise, without

too much stimulation and expenditure of nervous energy, and undoubtedly serves this purpose very well. The method is also suitable for teaching young children.

2. *The definite type of exercises* and the effects or values for which they are practiced have been discussed at length in the introductory chapter. Briefly restated, they are clean-cut, sharply defined, localized movements, relatively simple or capable of subdivision into simple elements. Each element usually employs the full range of one kind of motion in one or only a few joints and therefore maximal, localized contraction of circumscribed muscular groups, with corresponding stretching of opposing muscular and fibrous structures. At the same time large muscular areas are kept in static contraction in order to keep other parts of the body from moving. Thus there is both localization and wide distribution of muscular action, the apparent contradiction implying that the action is of different kind: concentric (shortening) in the former case, static and eccentric (lengthening while offering resistance) in the latter. Herein lies perhaps the chief difference, physiologically, between the definite and indefinite types of exercises. In the latter the muscular action, while widely distributed, is of the same kind: large systems of closely allied muscle groups being allowed to contract and shorten in accordance with their natural or habitual modes of association, thus causing moderate movement of many segments rather than extensive movement of a few. In the definite exercises the localization is always of such a character as to cultivate mobility of a kind and in directions more or less neglected in the ordinary activities of daily life. Similarly the muscular action is such as to increase localized muscular control everywhere and especially of those muscular groups responsible for good posture—the upper back and shoulder-blade muscles, those of the abdominal wall and the hip joint extensors. With increased control of these muscular groups, definite exercises also aim to increase their tone—habitual state of contraction—as well as their endurance. At the same time such exercises aim to stretch and increase the power of localized relaxation (if such a term may be permitted) of the opposing muscular groups—the upper chest and lower back muscles. It is on the ability to contract the upper back and posterior scapular muscles without much associated contraction of the lower back muscles that good posture in the upper part of the body, without excessive "hollow back," depends. This is true both in the practice of gymnastic exercises and in the habitual carriage while sitting, standing, walking or moving about in a natural way. In the latter case good posture is maintained by the "tone" of the upper back and abdominal muscles,

in the former by conscious contraction of these groups supplemented by the hip joint extensors.

By their careful selection and definition, their localized character, their completeness of range in movements and their sustained muscular action—local as well as general—while positions are being held, definite gymnastic exercises aim to cultivate the posture sense and the kinesthetic sense generally, to increase the power of equilibrium, to train habits of correct weight distribution, of quick and accurate motor reactions—in short, efficient motor habits and subjective motor control.

Methods of teaching definite exercises. The presentation may vary between the extremes of the most elaborate, complete and even repeated demonstration accompanied by detailed explanation, comment, suggestion, warnings, etc., on one hand, and the mere naming of the movement in the preparatory command, with or without a cue, on the other. The degree of explicitness will depend on the age, intelligence and active attention of the pupils, on their familiarity with the work in general and with the particular exercise, as well as on the difficulty of that exercise. It will also vary with the teacher's ability, or the lack of it, to give effective supplementary instruction in the form of admonitions, stimulation, general and individual correction after the movement is in progress or while positions are being held. The teacher's judgment is the principal determining factor in this respect and this, too, will vary with his temperament, experience and even momentary inclination. It is always wise to make the presentation as brief as possible consistent with clearness, and rely for good execution on supplementary directions and stimulation after starting the exercise.

The most logical and under certain (favorable) conditions the surest way to attain definiteness is to have the class do each movement on the word of command and hold the position reached an indefinite length of time. Either of the two forms of descriptive commands may be used—the imperative of the verb for each part of the exercise, or the present participle as preparatory command for the exercise as a whole and the numerals as final commands for the respective parts. Repetitions are not apt to be numerous and should not be, if the teacher is wise. The position is emphasized rather than the movement. This gives ample opportunity for correction, admonition and stimulation. It is preëminently suited for, and effective in, posture training, and to bring out quick and accurate motor response. This method and its technique have been brought to a high state of perfection in Swedish gymnastics, and when skillfully applied undoubtedly accomplish in a most effective manner most of the objects for

which gymnastic work stands. When unskillfully applied, however, there is apt to be a lack of continuity, owing partly to unduly prolonged maintenance of position, partly to too lengthy and too frequently repeated descriptive commands. Also there is an element of uncertainty, of high nervous tension, in doing single movements on command, which, while it may stimulate at first, may, if long continued, lead to nervous fatigue and defeat its own object by causing listlessness. This means poor response and lack of vigor in movement or position, or what is really a manifestation of the same thing, anticipation of the command by many members of the class with resultant loss of snap and unison. Such anticipations, as has already been pointed out in discussing gymnastic commands, occur if the repetitions are numerous and follow each other at uniform intervals, approaching a rhythm. Finally, most people have an elemental, instinctive appreciation of and desire for rhythmic movement. This is partly responsible for the tendency of all classes to get ahead of the command when movements are repeated many times. The lack of opportunity to satisfy this instinct makes the execution of exercises on command throughout a lesson seem tedious to many people. For these reasons many teachers arrange their lessons in such a way that in one part the exercises are of the definite, localized, so called "corrective" type, done on command; while in the other parts of the lesson more indefinite, complex, rhythmical exercises are given, in which there is more continuity of movement, wider distribution of muscular action, no distinct holding of position and less attention paid to posture or other details.

Rhythm and definiteness. Now, if this element of definiteness is essential for effectiveness in certain directions, and rhythmical continuity for effectiveness in other directions, why may not these features be combined and both kinds of effects be obtained to a high and approximately equal degree from a majority of the exercises in the lesson? Why may not the bulk of the material be so selected, arranged and taught, that either feature may be emphasized at various times, or both may be attained at the same time in a measure sufficient to insure the effectiveness of each? This would remove most of the objections to or shortcomings of either style of work and satisfy all demands. It would give greater elasticity or latitude in efforts to adapt the work to varying conditions and groups.

It is submitted that gymnastic material can be managed in a way to do all this. That it would be possible, for example, to arrange a series of lessons at the beginning of which all the exercises are of the indefinite, rhythmical type, not calling for

much exactness in execution nor sustained positions, but having sufficient "swing and go" to interest a class at once and to produce the organic effects and the exhilaration of vigorous exercise that all classes appreciate. The element of definiteness could then be introduced gradually by modifying the exercises originally used so that they can be subdivided and practiced with more accuracy of detail. Or simpler types may be substituted from time to time, until, at the other end of the series, the majority of the exercises would be capable of execution on command or in rhythm as might be desired. This transition might be made so gradual that at no time need there be any more loss of continuity than might naturally be expected in teaching any new exercises, even those of purely rhythmical and indefinite type. But the character of the rhythm and of the execution of the rhythmical movements will be changed. Instead of more or less even uniform rhythm and blended or oscillatory movements, there will be many kinds of rhythm, usually syncopated. The movements may all be quick and yet the rhythm be slow, if the pauses between the movements are long, as for example in arm bendings and stretchings, trunk twistings, leg flingings, charges, etc. Or both movements and rhythm may be slow, as in trunk bendings, arm raisings, slow heel raising and knee bending. Again, the pauses between movements may be varied—one long, the other short, as in arm bending and stretching; or all different, as in one form of heel raising and knee bending. Or successive parts of a compound movement may be done with different speed, the first two quick, the second two slow, or vice versa; or the first and last quick, second and third slow and so on. In all cases where the speed of or the length of pause between successive parts of a movement varies, the rhythm will, of course, be uneven—"broken" or "undulating" rhythm. Most of the movements will be distinct from each other, punctuated, as it were, by positions. Such progression from indefinite to definite style of work might be suitable to classes of children, or of adolescents and adults who could not be expected to give enough thought and effort to the work to become interested in it in any other way. It might be called the most natural mode of progression. The reverse order, starting with the simplest types of definite movements, done on command, and demanding from the outset great attention to detail, then gradually introducing the rhythmical element and more complexity, but without any loss in definiteness, is entirely practicable, and the desired results are more surely and quickly obtained than by the other method. Such progression might be suitable for classes of adolescents or adults whose intelligent coöperation and interest can be secured, by one means or

another, from the beginning, or who have had adequate previous training, as for example upper elementary, high school and college students.

How to combine definiteness of execution with rhythmical continuity is primarily a question of skillful teaching. But it is also a matter of choice, definition and combination of movements, as well as careful progression. It means that the majority of the exercises will be such as are capable of at least some degree of subdivision, or are built up of simple elements into various combinations and alternations. Each part can then be practiced separately on command as much as is desirable in order to obtain correct execution and quick response. But the bulk of the repetitions may be made rhythmically, while familiar movements may be started rhythmically at the outset. Thus sufficient total quantity and continuity of muscular work with commensurate organic effects can be secured. During this rhythmical repetition there is apt to be some loss of definiteness. But with the right spirit of enthusiasm, energy and perseverance on the part of the teacher, by his constant attention to details, his insistence on correct execution and momentary retention of positions, coupled with judicious choice and progression, the two principles —rhythm and definiteness—may be harmonized and the maximum values represented by each obtained simultaneously.

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Having in the previous chapters discussed at some length the various phases of teaching, the remaining chapters will be devoted to a consideration of such topics as classification of exercises, principles of selection, definition and combination of movements, arrangement of lessons, and progression.

IV. SUBJECT-MATTER.

1. Aims and Values of Gymnastics.

As a basis for the discussion of the content and character of the gymnastic lesson a consideration of the aims, purposes and effects of the work would seem in place. While there is now no great diversity of opinion as to the principal objects aimed at and the real values represented by gymnastic work, there still exist some confusion and misconception, at least in the minds of the laity, regarding what constitutes rational gymnastics and what results may or may not be accomplished by the work.

It is unfortunately true that at present gymnastic work suffers from the extravagant claims made for it by some of its earlier enthusiastic advocates in this country, and from the limitations imposed by loyalty to traditional, more or less empirical conceptions and methods. It is often placed in a false position and made to appear at a disadvantage by superficial and specious comparison with dancing, play, games and athletics, and by being classed indiscriminately with these in general and cursory discussions of the values of physical education. Again, the reactive effect of excessive claims on the one hand, and all too numerous examples of poor teaching and poor work on the other, have led some sincere and thoughtful exponents of physical education to relegate gymnastics to the rôle of a mere therapeutic agent, to be used only in cases requiring correction of faulty anatomical relations, developmental defects, etc. By implication or direct statement it has even been denied that the work has much, or any, educational value, or that it is capable of supplying the need for general exercise in an adequate and interesting manner.

That there are numerous instances of work carried on in a way to justify views like these is undoubtedly true. There may also be found examples of work which fails to accomplish even the so-called corrective purpose. Perhaps this is more often the case than not. But such extreme depreciation of gymnastic work is unwarranted and exceptional. That it has a place, and an important one, both as a hygienic agent and as a positive factor in education, is recognized by the vast majority of leaders in physical education as well as by an increasing number of men and women identified with efforts to advance the scope and effectiveness of education in all its phases.

(1) *The hygienic aim of gymnastics.*

This is to furnish muscular exercise of an all-round character, sufficient in quantity, continuity and vigor to promote a lively tissue metabolism and thereby to insure a marked organic reaction. In the brief period usually allotted to a gymnastic lesson this organic stimulation must necessarily be as powerful as is consistent with safety, in order to produce lasting and permanent effects. The work must, therefore, be concentrated enough to cause immediate and progressive increase of heart action, with accompanying acceleration of the whole circulation; rise of arterial pressure; relief of venous and lymph stasis everywhere, and especially in the body cavities and internal organs; flushing and heightened activity of the skin; deeper and more rapid ventilation of the lungs; vigorous stimulation of the abdominal organs.

All these immediate organic reactions are brought about in two ways: (1) By the mechanical effects of the exercises—the pumping action exerted on the venous and lymphatic circulation by alternate contraction and relaxation of muscles, by movements in joints and by increased thoracic aspiration; increased peristalsis and more vigorous action of the glandular organs, induced by greater variations of intra-abdominal pressure consequent on more extensive action of the diaphragm and abdominal muscles, as well as the shaking and mutual massage of the abdominal organs. (2) By the adjusting influence of the central and sympathetic nervous systems in response to direct or reflex stimulation by the products of muscular activity. When these organic effects are obtained in a moderately high but not excessive degree through the execution of exercises in a well-planned and skillfully conducted gymnastic lesson, they are accompanied and followed by a sense of exhilaration and physical well-being as enjoyable and refreshing as they would be if produced by any other form of bodily activity. The frequent and regular repetition of such exercise is bound to increase the functional efficiency of all the organs, to favor all the processes which make for health, vitality and organic vigor. That such is the case is abundantly attested to by observations of teachers and medical directors in school, college and especially in Y. M. C. A. gymnasia.

(2) *The educational aim of gymnastics.*

This is primarily the training of subjective motor control. Such control is shown on the one hand in ability to assume and maintain good posture, in erect carriage, ease of bearing, grace and economy of ordinary movement; on the other, it leads to general agility, ability to manage one's body to best advantage

tional process is preceded by and based on the informal and more or less spontaneous, self-directed psycho-motor training of the earliest years of life. During the first years of school life the further training in motor control receives some attention. But the guidance offered is directed mainly to the development of the accessory neuro-muscular mechanisms and their coördinations. As regards the larger, fundamental movements, and the further cultivation of their coördinations and adaptations, the child is often left to his own devices. It is assumed that he will get sufficient training in this direction through spontaneous play and games. And to a certain extent he does. But here he is likely to follow trends and habits already acquired, to be restricted by these and by correlated structural peculiarities. Unless the activities are abundant and infinitely varied in character, the number and delicacy of coördinations so acquired will be limited, and his range of motor adaptation, outside the habitual activities, will be equally restricted. Supervision and guidance of play and games from kindergarten to playground represent efforts to widen the scope and increase the effectiveness of this kind of motor training. Under ideal conditions (such as probably never will be realized) it is conceivable that such training might be made adequate for all purposes. But at best school life will always represent a relatively large proportion of time spent in sedentary work, with its unfavorable effect on posture and its tendency to deficient or faulty development of the motor organs.

Furthermore, the motor control resulting from play and games is largely objective, unconscious; it makes use mainly of already acquired, reflex coördinations, following lines of least resistance, and does not tend to great diversification, except in so far as the activities are diverse. It is true that such activities, when numerous and varied enough, cultivate the kind of bodily control which relates the individual to external things, and especially to moving objects; that they train the ability to judge distance, speed and momentum, and to gauge correctly the muscular efforts with reference to these, and so may result in a fair degree of general agility. This may be called *applied* or *objective* motor training and is of direct practical value as an element of objective physical efficiency. The values in social and moral ideas and habits of thought associated with and accruing from this kind of training are of course of overshadowing importance and would alone

*For a further discussion of this subject see introductory part of Gymnastic Kinesiology, by Wm. Skarstrom.

iciency in activities of this objective character is dependent on and in turn will tend to increase the amount of purely *subjective* motor control. With this is meant the ability to manage to best advantage the parts of the body with reference to each other and the body as a whole with reference chiefly to space, gravity, momentum and balance. The degree of such subjective control may be said to represent the individual's potential power of motor adaptation, and is applicable to any form of activity with which it has elements in common. It expresses itself in the individual's general bearing, posture and habits of movement. Ease, poise, grace, agility and their opposites are terms denoting relative degrees of subjective control or the lack of it.

For this purely subjective training, gymnastics and dancing are particularly effective. They are both subjective forms of activity. They both require *conscious* attention to the movements and the posture of the body as a whole or its parts. In each the movements are predetermined and their execution represents efforts to conform to more or less clearly defined standards. The movements are artificial in the sense that there is no immediate objective application. In gymnastics, especially, they are often more extreme in range or more localized and sharply defined than would be called for in ordinary activities, but not more so than might at some time be called for and applied to the accomplishment of some objective purpose. In this predetermined, clearly defined character, this definiteness of gymnastic work, lies its distinctive effectiveness as a means of subjective motor training. It makes possible the cultivation, in a systematic manner, of the latent, potential powers of coördination which might otherwise remain dormant; the opening up of new paths of motor associations; the perfecting of existing but vague and uncertain coördinations until they become assured, well adjusted, requiring less and less conscious attention and are finally automatic. A good illustration of these processes is the acquiring of ability to land lightly, with sure balance and good fundamental position, in jumps, vaults and dismounts from gymnastic apparatus, under a great variety of conditions as regards height, amount and direction of momentum, position and movement of the body in the air, etc.

The ability to assume and maintain good posture is really a phase of the general subjective motor control aimed at by rational gymnastics. Erect carriage, easy poise and fine bearing, when habitual, signify perfect adjustment, weight distribution and balance of the different parts of the body. They represent economi-

cal distribution of muscular tension, a high degree and even balance of muscular tone, equalized pressure on the surfaces of joints and minimum tension on their fibrous structures. All this implies readiness for all kinds of action, elimination of unnecessary strain, conservation of energy. Good posture also means the most favorable conditions for the internal organs as regards room, free circulation, relative position and natural support. Thus it makes for health and efficiency, as well as beauty and harmony.

The degree of erect posture and well-balanced poise attained by an individual will vary with his natural endowment (inherited tendencies), the number, kind and diversity of activities in which he engages, and the habits he forms or is led to form during the first fifteen or twenty years of his life. In perhaps the majority of cases, where little or no attention is given to the matter, the individual falls far too short of his possibilities in this respect, as well as in the matter of general motor efficiency—subjective and objective. That such discrepancy between the potential and the actual may not be due entirely to insufficient quantity or variety of bodily activity in early life (though that is probably the chief cause) is suggested by numerous instances of young men who have engaged freely in various games and sports from childhood, and who yet, in their carriage and subjective motor habits, seem to be in need of considerable further training.

We are accustomed to think of certain primitive peoples, like the Indians before they were touched by civilization, as naturally endowed with erect carriage and fine bearing, this being a racial trait, associated with and the result of a free and active outdoor life. But while this may have been true to a certain extent, it was also the result of conscious effort and training associated with their ideals of manly qualities, of bodily prowess and beauty, and of a proper pride and dignity of character. So also with the Bedouin nomads of the Arabian deserts, noted for their superb carriage, dignified bearing and grace of movement. According to the accounts of travelers, their children are really educated to this by parental precept, admonition, reproof and suggestion.

One of the aims of gymnastics, then, should be to emphasize posture training throughout. Every exercise should be selected, defined and executed in a way to further this aim, directly or indirectly. And not merely as a corrective for faulty posture, whether in the lower or upper part of the body. But rather the ideal of correct execution of all exercises, of efficiency and grace of all movement, should include the maintenance of the best possible posture, no matter what the difficulty, magnitude, speed

or power of the movement. Any exercise incompatible with good posture should be discarded. In so-called corrective exercises the element of posture training is merely emphasized by so defining the movements as to demand supreme efforts in the direction of correct posture, or by introducing difficulties making such extreme efforts necessary in order not to lose correct posture.

Equalization of growth and development may also be considered a legitimate aim of gymnastics, closely associated with posture training. The exercises selected and defined with a view to their effectiveness as a means of postural and general subjective motor training will also exert the most favorable influence on growth and be conducive to a harmonious muscular development. When necessary these should be supplemented by special exercises of a more powerful and localized character.

The acquisition of useful forms of agility. The attainment of proficiency in primitive forms of bodily prowess, such as various kinds of leaping, vaulting and climbing, is one of the practical results of the subjective training aimed at by gymnastics. Speed and endurance in running may also be included in this category. A moderate proficiency in such matters may be needed urgently from time to time even under the sheltered and comfortable conditions of modern, civilized life. At any rate it gives the possessor a sense of confidence and assurance of being able to take care of himself in ordinary emergencies or mishaps.

In the matter of moral and social training gymnastic work is inferior to games or athletics. But while the excessive claims made for it in this respect have not been borne out by experience, the work may not be devoid of value in its influence on the individual's mental life and his character. The execution of precise and vigorous movements, whether in response to a command, or timed exactly to conform to a given rhythm and to be in unison with the movements of the other members of the class, requires concentrated attention, discriminating and often supreme effort. Aside from the mental processes involved in relating kinesthetic sense perceptions and their associated motor ideas to volitionally coördinated movements, and the purely motor training this represents, such work cannot but make for improved habits of attention and strengthened will power, while self-control and a spirit of coöperation are cultivated through the appreciation of the beauty and power of orderly and disciplined group action.

The individual's realization of the benefits received from a conscientious performance of the work might reasonably be expected to lead to the formation of wholesome habits of life. Having once experienced the satisfaction and sense of well-being, of power and efficiency, associated with regular, systematic, rational exercise, he is more likely to treat his body with due

respect, to heed its laws and recognize its possibilities as well as its limitations. The influence of this kind of self-respect on the individual's whole life and character is not to be underrated.

(3) *Gymnastics as recreation.*

While the hygienic and educational values are dependent on the personality and skill of the teacher as well as on the character of the work, this is true in an even greater degree as regards the immediate enjoyment and interest in the work. Although gymnastics should never be placed in the false position of serving as fun and amusement, or be made to take the place of play and recreation, there is no reason why a skillful and enthusiastic teacher cannot make the work (and it is always real work, if it is to amount to anything) interesting and enjoyable. He may do this partly by suggestion, by making his own animation, earnestness and enthusiasm contagious, partly by adapting the work and his style of teaching to the varied and changing interests of his pupils.

With classes of young children the work may be presented and carried on in a spirit of play and make-believe, enlisting their imagination and their natural desire to express their ideas in terms of representation movements. This no doubt is fun to them. But after the age of twelve or thereabouts gymnastic work cannot be expected to appeal directly to the pupils as fun or even to be interesting for its own sake. Indirectly, however, as means to an end, and to a certain extent through the spirit of emulation which the teacher may legitimately arouse, the work may continue to be of interest. And, at all times, when properly conducted, there is the pleasure and satisfaction of vigorous action, the inspiration of doing something worth while and doing it as well as possible, in unison and coöperation with others, and with the knowledge that it will result in immediate and permanent benefit. Only in this sense can gymnastic work be considered recreation. And that it is so considered by large numbers is indicated by the enthusiastic and unflagging interest maintained in the optional classes of the Y. M. C. A., Y. W. C. A., Turnverein, Settlement and Municipal gymnasia all over the country.

(4) *Adaptation of aims to conditions.*

The emphasis given to any of these aims and values, and therefore the character of the work, will vary with the age, sex, ability, state of training and physical condition of any given group of pupils. It will also depend on the mental attitude toward the work shown not only by pupils but by responsible

authorities. Finally the work and its aim must be in accord with the general purpose and fit in with the other activities of the institution in which it is carried on.

1. In educational institutions the responsibility of the school (or college) to see that no ill effect is produced by its curriculum on the health and development of the pupils must be recognized. This implies the necessity to counteract the unfavorable tendencies of school life—its effects on general metabolism, on the abdominal and thoracic organs and on the spine—inevitably associated with sedentary, indoor occupation. Besides attention to hygienic conditions in the matter of ventilation, light and seating, as well as the most favorable distribution of school work, this more or less negative aim is to be accomplished by giving the pupils frequent short periods of exercise in the form of gymnastics, plays and games. The gymnastic work of such brief relief periods would aim to bring out as strong organic and corrective postural effects as possible in the short time.

In addition to counteracting the unfavorable tendencies associated with the sedentary character of school life, the school is responsible for such psycho-motor training as the individual needs in order to be able consciously to control his own body. The training of such subjective control, in which posture training should always be a large element, is, therefore, to be emphasized in the gymnastic work of the regular school period devoted to physical education. It is best accomplished by exercises of the definite type, representing the simpler elements of movement out of which are composed the more complex movements of ordinary activities, as well as of dances, games and athletics. But while emphasizing the educational aspects of the work, it should be conducted in such a way as to produce the greatest possible hygienic effects at the same time. In the successful combination and accomplishment of these aims lies the opportunity of the skillful teacher to make the work appreciated, interesting and enjoyable.

2. In non-educational institutions—including social service and philanthropic enterprises of a more or less educational character—the emphasis may be, and often is, put chiefly on the hygienic aspect of the work. At the same time efforts are made to have it represent as much wholesome recreation as possible—in its character, teaching and accessories or adjuncts. The style of work which most readily lends itself to the accomplishment of these aims comprises the rhythmic, more or less indefinite types of exercises, often in the form of memorized drills, practiced partly with a view to eventual public performance. But even here it will be advantageous and desirable for the teacher—from the standpoint of maintaining interest as well as in the matter

of rendering service—to keep in view the educational possibilities of the work. By striving to make the pupils understand and appreciate these values he will gradually create a demand for and an interest in the kind of exercises which most effectively represent them, and thus make opportunity for increasing the scope of the work.

2. Selection.

The necessity for care and judgment in the selection of gymnastic exercises is now generally recognized. The principle of selection has not always been universally accepted, however. It was held by some of the older Germans, for example (notably Spiess and later DuBois Raymond), that if an exercise could be done, that was sufficient reason for doing it. This all-possibilities theory led to the use of much work which was either of a nature tending to produce undesirable results, or else trivial, purposeless and even absurd. The theory is now generally abandoned, but the effects of it are still seen in the use or encouragement of types of exercises which are, to say the least, of doubtful value. Some such types, for example certain exercises on gymnastic apparatus with the body supported on the arms, are admitted, even by many teachers who use them, to have obvious objectionable tendencies, and can be defended only on grounds of popular interest based largely on traditions and associations.

Principles of selection. In the selection of exercises we should be guided by what practical and theoretical knowledge we possess regarding the immediate and remote effects of the exercises, their suitability as material for class work under any given conditions, and their adaptability to the purposes for which the work stands. In the last analysis this will mean an understanding of the main features of the anatomical mechanism of the movements, a working knowledge of the physiology of exercise, and the correct application of these to the needs and abilities of any given group of pupils.

Only such exercises should be selected as contribute, directly or indirectly, to one or more of the main objects of the work. Such as would distinctly tend to defeat any of these objects, even though they might represent value in some directions, should be excluded. In the latter category would fall, for example, a number of apparatus exercises—on the horse, parallel bars, rings and horizontal bar—in which the joint mechanism and muscular action are such as to make a good posture of head, chest, shoulders and upper back extremely difficult, if not impossible. Similarly, exercises subjecting the organism to excessive strain, local

or general, or involving too great risk of injury from falls, or in any other way, should be discarded for use in class work, and even discouraged when indulged in outside of class. This does not preclude the practice, after proper preparation and with sufficient safeguards, of feats of strength, skill and agility of a character in keeping with the normal structure and natural use of the body, and having a bearing on possible legitimate demands which may be made upon it. In considering the question of harmful exercises it is to be remembered that, while occasional performance of any exercise with undesirable tendencies cannot always be asserted to be directly harmful, the inclusion of such exercises in class work, or their encouragement outside of class, is equivalent to the teacher's stamp of approval. The teacher's selection and definition of exercises determine or strongly influence the pupils' ideals and standards of quality, their ideas of what is correct and permanently beneficial.

In selecting exercises for different groups, the age, sex, strength, ability, state of training and mental attitude of the pupils must of course be given due consideration. Values and effects are often relative. What may be safe, beneficial, or interesting to one individual or class may be the reverse to another. In this respect selection is often bound up with progression.

3. Classification.

No single exercise embodies all the desirable features, all the beneficial effects for which gymnastic work is practiced. The same is true as regards athletics, games and sports. The nearest approach to it is perhaps found in breast-stroke swimming. In formal gymnastics such all-round exercises do not occur. And even if, by dint of ingenuity, a few such exercises could be invented, it would not be desirable nor even feasible to limit ourselves to their exclusive use. As soon as they were mastered they would cease to represent educational value and therefore lose interest.

There are, of course, many combinations of movements which are of a more or less all-round character, and they are very useful in rounding out a gymnastic lesson, particularly in the matter of obtaining marked organic effects. Where this is the main object, and in classes requiring that the bulk of the work be of the indefinite type, a considerable proportion of the exercises may be of this all-round character. But generally it is not wise to have too many in a single lesson.

While all gymnastic exercises have certain main characteristics in common—e.g., they all involve muscular contraction, coördina-

tion, some form of mental effort, fatigue, etc.—they differ in details—in the amount of these various features, and in the local effects they produce on the body. According to these details and local effects they may be referred to one or more of a few main groups, each of which represents some special features, such as circumscribed muscular action, or pronounced effects on certain organs, or wide distribution with great intensity of muscular effort and with correspondingly heightened organic reaction. There are, of course, no sharp lines of demarcation between these groups; they all overlap more or less, and many of the distinctions are relative. Often an exercise may be referred to one group at an early stage of training and to another group later. Thus classification may be dependent on progression. Again, many exercises embody several important features at once. Such may be either put in a group by themselves and labelled "miscellaneous" or "all-round" exercises, or designated by some descriptive term, such as *charges*. Or they may be referred to any one or all of the classes the characteristics of which they represent.

The classification employed in Swedish gymnastics seems on the whole satisfactory for all practical purposes. With slight modifications it will be adhered to both as regards terms and characterization. It comprises the following groups: *order exercises,* principally marching; *leg and arm exercises* (especially leg); *arching movements* (for the upper back); *compensatory movements* (for the lower back); *lateral trunk exercises; balance exercises; abdominal exercises; back and shoulder blade exercises; suspension and arm support exercises; jumping, vaulting, and running* (precipitant exercises), and slowing-down or *breathing exercises.*

(1) *Order Exercises.*

In this group are included marching and evolutions, facings, march steps of stated number—any exercises involving quick and unexpected changes of position, direction or momentum, and therefore demanding a continuous and high degree of concentrated voluntary attention. The element of purely "mental" work—alertness, quick perception, understanding, decision and instant response without much preparation—is emphasized. The primary purpose of this class of exercises is to wake up a class: to stimulate it without producing too much fatigue; to focus a more or less dispersed attention, to change it from a predominantly reflex to a more voluntary character and to direct it toward the prompt execution of precise, vigorous and consciously controlled movements. The exercises in this group

are generally of a character demanding muscular contractions of only very moderate intensity, but widely distributed, including all or most of the fundamental and naturally associated groups. They are usually repeated a great number of times in rhythmic cadence and in general are of the indefinite type. (This does not appply to quick changes of gymnastic positions executed on command.) For this reason they are very effective as a means of moderate organic stimulation.

These two characteristics—focusing and determining the line of active attention, and producing a moderate but general organic reaction—make this group of exercises eminently suitable as introductory to the rest of the gymnastic lesson. They may be truly designated as "warming up" exercises, preparing the pupils and putting them into the proper mental attitude and bodily condition for the work to follow. When well presented and conducted, they are usually interesting to the class. The pupils are put on their mettle to keep wide awake, to contribute to the successful and finished performance of the group action. The incentive to wholehearted coöperation, to concentrated attention, to conscientious and careful effort, is here greater than perhaps under any other circumstances. The least mistake is not only liable to jeopardize the success of the group action, but may make the individual who is guilty of it conspicuous in a way that would chagrin even the most apathetic and make him anxious to avoid it—e.g., colliding with or being stepped on by his mates, marching off alone in a wrong direction, causing loss of alignment, rhythm, etc.

Aside from training habits of attention, quick response and coöperation which work of this character undoubtedly does, it also may be made to contribute appreciably to the general subjective motor training of the individual. It would chiefly tend to improve gait and carriage; cultivate the sense of equilibrium and rhythm; teach economy of effort in the management of momentum and weight distribution, in blending and smooth sequence or alternation of movement. The element of coördination while not very prominent, at least as regards learning new forms, is of a character directly applicable to the ordinary activities of daily life.

Finally, the exercises in this group serve the useful purpose of teaching the class certain manœuvres, evolutions and formations which enable the teacher to handle it with ease, facility, orderliness and minimum expenditure of time. In this sense, as well as in the sense of compelling attention, lively action and proper coöperation, these exercises are of a truly disciplinary character.

The principal type is marching. The progression may be from flank marching—single or double file—of a rather indefinite character, in which the class practically "follows the leader" and the leader is guided informally by the teacher, with or without commands. This is especially suitable for classes of young children and serves mainly to teach them to keep time and step. After a time facings and steps, executed on command, are taught separately. Then, gradually, the resultant training in rhythm, response, and unison of action is applied to real marching, making possible at first front and rear marching; then changes (without halting) from one or the other to flank marching and *vice versa;* still later starting a march with a facing left, right or about and coming to a halt with a facing; changing from single to double file, or to a column of fours, etc.; and finally the whole field of tactics and evolutions. At whatever stage in the progression, the work should always be of a brisk, snappy character, with the element of uncertainty or unexpectedness prominent.

With older pupils, whose intelligent interest and coöperation can be relied on from the outset, the progression may with advantage be from simple facings and steps to front and rear marching, etc., without the preliminary "indefinite" flank marching.

The other type of order exercises consists of quick changes from one gymnastic position to another on the word of command. Such exercises may be used in the place of marching or as supplementary order exercises, especially with children, and in the schoolroom, where the best type of marching cannot be well carried out. While undoubtedly effective in stimulating attention, it is not wise to use this type too often or too much at any one time. Pupils do not always react as expected, and if they fail to enter into the spirit of lively action which the movements are intended to elicit, the object for which they are given is defeated and the opposite conditions may result. This is particularly apt to happen if the commands follow each other too rapidly, regardless of the failure of many pupils to respond promptly and with precision.

(2) *Leg and Arm Exercises.*

The chief features of this class of exercises are the amount, localization and to some extent the character (rhythm, speed, range, etc.) of the muscular work demanded. Aside from the lively interplay of the trunk muscles which always occurs when the body weight is shifted, and which in some of the exercises of this group is an incidental feature of considerable importance, the main muscular action involves the large and massive groups

of hip, thigh and lower leg. To this is added, in combined arm and leg movements, the powerful contractions of the fairly large sized muscles about the shoulders as well as the less bulky arm muscles. The repeated contractions of these large muscular masses—even if moderate in range or speed—alternating with more or less complete relaxation, profoundly influence the blood and lymph circulation. And not only locally, but all over the body. The arterioles of the working muscles dilate as do those of the corresponding skin areas. The first effect of this would be to lower general blood pressure. But this is prevented, and the pressure is even increased, by the compensatory constriction of arteries in the abdominal and other body cavities, as well as by increased heart action, all brought about reflexly by adjusting nervous mechanisms. The auxiliary forces of the (venous) circulation—pumping action on veins (and lymphatics) exerted by muscular contractions, movements of joints and thoracic aspiration—are brought into full action. Thus the circulation of both blood and lymph is accelerated and equalized. Venous and lymph stasis of internal organs is relieved, while the skin all over the body becomes flushed and its glands are more active. Other organs are affected correspondingly. Indeed, this class of exercises represents the hygienic element—organic stimulation—perhaps as typically as any. This is particularly the case when the movements are repeated rhythmically. Many of the exercises in this class demand a relatively small amount of nervous tension in the way of alertness, difficult coördination and fine discrimination of effort (providing the progression is what it should be). At the same sime they may be defined and taught in a way to have considerable "go" and rhythmic action. These characteristics, as well as the great variety of combination to which they readily lend themselves, make possible a fairly accurte gradation or adjustment of quantity and intensity of the muscular work, with corresponding gauging of organic stimulation. For all these reasons they are admirably adapted to be put at the beginning of the lesson. The pupils are made to feel that they are doing something. They are readily led to direct their attention and will to vigorous and controlled muscular action. When these exercises are done rhythmically the pupils "get into the work" of the lesson in a way that is both interesting and satisfactory.

Besides the general effects noted above, the exercises of this group develop size, strength and coördination of the leg muscles in a most effective manner. This is particularly true of the deep knee bendings and the lunges, which employ the complete range of contraction, or great speed, or both, of all the muscular groups

from the hips down. For this reason, as well on account of their general effects, they should not be left out of the lesson, even if the pupils consider that they get enough leg work in other ways, such as walking, running, standing for long periods of time, etc.

Some of the smaller movements such as heel raising, toe raising, foot placings, etc., may be defined and executed in a way to strengthen the arches of the feet. The foot placings also call for quick, widely distributed and well-controlled action of the large trunk muscles, needed in the sudden changes of weight distribution, in gathering and checking momentum. The arm movements that are used in combination with the leg movements may be considered to serve partly the same general and special purposes, partly to increase the complexity, difficulty and total muscular work of the leg movements. They also serve as preparatory or supplementary training for similar types when used for special purposes in other groups, either by themselves or in combination and alternation with trunk movements.

(3) *Arching Movements.*

The exercises of this group represent posture training in gymnastics more distinctly and exclusively than those of any other group. They are so defined that when properly executed they tend to exert an influence on posture in the upper part of the body diametrically opposite to that exerted by the conditions of daily life, and especially those conditions associated with sedentary occupations.

The factors which determine posture. Aside from such general conditions as health, vitality, good nutrition and self-respect, the chief factors which determine posture are: (1) the size and shape of bones and their articular surfaces; (2) the relative length and tension of opposing muscles and fibrous structures.

The relative size or shape of ribs, clavicles, scapulæ and vertebræ, as indicated by the general configuration of chest, shoulders and back, is largely a matter of heredity (when not interfered with by disease or malnutrition). But in some measure it is also influenced by the use the body is put to, especially during the growing period. Use—exercise—not only influences the size and form of the bones directly, through the stress of pressure and tension to which it subjects them, but also indirectly, through the resulting muscular tone and the constant tension on the bony segments that this implies.

The other factor—relative length and tension of opposing muscles and fibrous structures—is even to a greater degree

associated with and dependent on muscular tone, and this in turn is largely determined by habits of posture and movement. Frequent complete contraction against moderate resistance, or remaining in almost complete static contraction for considerable periods of time, while seldom being subjected to prolonged or complete stretching, are conditions conducive to increase of muscular tone and a shortening of muscles as well as fibrous structures. The opposite conditions—prolonged passive tension (stretching) and "eccentric" or even static and "concentric" contraction of slight or only moderate range—result in a decrease of muscular tone and a permanent lengthening of muscles as well as fibrous structures. For fibrous, like muscular, tissue tends to shorten when not frequently stretched and to lengthen when subjected to frequent or prolonged tension.

Faulty posture. In the ordinary standing or sitting position, or while walking and moving about, the weight of the head, shoulders and arms tends to increase the natural forward curve of the thoracic spine. This is practically always associated with a drooping or forward projection of the head, a forward displacement of the shoulder girdle and more or less depression of the chest. The only provision for checking this tendency of the upper part of the column to collapse forward is the tonic contraction of the upper back and posterior scapular muscles. The force of gravity, therefore, acting for long periods of time, subjects these muscles to strong passive tension. When they yield and become lengthened, because of insufficient tone and endurance, the superimposed weight is in part carried by the posterior ligaments of the spine and shoulder girdle. At the same time the pressure on the anterior part of the vertebræ and disks is abnormally great, while the joint surfaces of the vertebræ and of the bones of the shoulder girdle are not in their normal relations.

On the other hand, the anterior muscles and ligaments are relaxed during long periods and are rarely stretched to their utmost. As the arms are moved forward most of the time, the anterior shoulder and scapular muscles often contract through their whole range and sometimes remain contracted and considerably shortened for varying periods of time. Everything is thus favorable for a relative increase of tone and a shortening of these muscles as well as of all the fibrous structures in front of the shoulders, including the ligaments.

Altered conditions of tension and pressure in and about the joints of the upper spine, shoulder girdle and chest thus lead to gradual adaptive changes, not only in the length and tension of opposing sets of muscles and ligaments, but probably also in the bones and their articular surfaces. Moreover, once the balance

in muscular tone is lost and faulty posture becomes habitual. The individual's habits of associated muscular action are also changed, so that almost every powerful effort emphasizes the faulty posture. He soon loses both the muscular strength and control necessary to assume correct posture. Any effort in this direction makes him feel strained and "unnatural." Hence, so far from correcting itself by any general activity, faulty posture rather tends to become aggravated by anything the individual does in a "natural" manner.

Posture training. In gymnastics, and especially in arching movements, as well as in the closely related back and shoulder blade exercises, the character of the muscular action and the mechanical conditions of habitual, relaxed posture are, as far as possible, reversed. The exercises are defined and graded with a view to give the pupils an ideal of good posture; to cultivate the kinesthetic sense in regard to posture in the upper part of the body; to train the coördination and power of localized contraction of the upper back muscles; to increase the tone and endurance of these muscles; to permanently shorten both the muscles and the fibrous structures in this region; and to stretch—to lengthen—the opposing muscles and fibrous structures of the upper front chest and shoulder region.

We seek to obtain these results, in part at least, through the practice of exercises which, under the rather inadequate designation of arching movements, are really variations of a single type of movement chiefly characterized by forcible extension—even effort at hyperextension, if such were possible—of the thoracic spine, with accompanying extreme chest expansion. Whatever the degree of difficulty and intensity—be it moderate, as in the fundamental standing position and simple "backward bending of head"; or extreme, as in so-called "backward bending of trunk" from difficult starting positions as regards arms and legs, or accompanied by powerful arm and shoulder blade movements; or done with the hands fixed on apparatus like the bar stalls, while the body is inclined backward from the ankles—the mechanism of the exercises is always the same in its main features. This may be described briefly as the most complete and localized contraction of the upper back muscles of which the individual is capable at the time. It involves at the same time a powerful stretching of the upper front chest and shoulder muscles, even though these may be in a state of moderate contraction ("eccentric") to help guide the movement or maintain the proper position. The anterior fibrous structures—fasciæ, fibrous coverings and septa of muscles, anterior ligaments of the spine and of the joints of the shoulder region—all these are similarly stretched. The

pressure on joint surfaces is also the reverse of that obtaining in the relaxed position.

The motor and postural training represented by this type of exercise consists, then, in part at least, of temporary and perhaps to some extent permanent improvement of anatomical relations. The permanent results in this respect may, indeed, be rather mediocre after growth has been completed or nearly so. And even during the growing period the results of the exercises, as practiced in the gymnastic lesson alone, may not be sufficient to lead to any marked anatomical change. To have the desired permanent effects on posture such exercises must be supplemented by similar and often repeated efforts on the part of the individual, for long periods of time.

But aside from some increase of tone in the responsible muscles and some stretching of resistant structures, the chief claim that can be made for the exercises is that they suggest the ideal of correct posture and are conducive to the kind of muscular control which is a prerequisite in any endeavor to improve posture by conscious effort. Furthermore, in stimulating a class or an individual to correct execution of such exercises, the teacher has an opportunity to impress on the pupils the importance of good posture, to urge them to strive for it at all times, to suggest definite, practical ways of attaining it (for example, by maintaining for a specified period of time each day a forced erect carriage while walking) and so to start them in habits which will ultimately lead to permanently improved posture.

The difficulties, in the way of faulty execution, are of two kinds. One is the tendency to merely tilt the head backward and at the same time to draw the shoulders back and *up*. The other is the strong tendency to excessive hollowing—hyperextension—in the lower back. They may go together, though the latter is more often associated with and aggravated by successful efforts to draw the shoulders back and *down*. Both are highly undesirable and are due to inability to localize properly the muscular efforts. Most people lack the power to control the upper back muscles independently of the lower. Any effort to straighten up inevitably leads to an increase in the lower (lumbar) curve of the spine. This may result in a leaning backward from the waist or in an excessive backward displacement of the hips. Besides being ugly such a posture is undesirable for other reasons. It means a weak position of the back in cases of falls or missteps, causes painful fatigue and strain in this region, is associated with excessive pelvic obliquity and lax abdominal muscles, and is therefore unfavorable for the abdominal and pelvic organs and the pelvic joints.

To resist this faulty tendency, and so to avoid acquiring one faulty posture while making efforts to improve another, it is necessary to contract the abdominal muscles almost as powerfully as the back muscles in all exercises of the type designated by the term arching movements. The contraction of the abdominal muscles tends to tilt the pelvis to a more horizontal plane, to straighten the lower spine, and so to neutralize the effect of excessive contraction of the *lower* erector spinæ group of muscles. In other words, it enables the individual to localize the *movement* high up in the back. With practice some power to *localize the muscular contraction* to the upper back region is acquired, so that at least moderate efforts to straighten up may be made without inducing much or any increased lumbar hyperextension. Correspondingly decreased contraction of the abdominal muscles will then be needed, and the whole position loses some of the feeling and appearance of stiffness which are apparent at first. Thus, gradually, the ability is acquired to maintain erect carriage without much or any conscious effort. It becomes more "natural" and finally habitual. As the power of localized muscular control increases, maximal contractions of the upper back and abdominal muscles (and even of the hip joint extensors) are insured in practice by doing the movements from more difficult starting positions, or by combining them with arm movements, or both.

The final effect in the way of muscular control, resulting from a diligent practice of arching movements, is an ability to dissociate, to some extent at least, the action of the upper back muscles from that of the lower; to be able to associate the former with vigorous action of the abdominals and even with the hip joint extensors. Such ability to make the innervation and association of action of muscular groups cross from the back to the front and again to the back of the body—literally to take in the slack on the convex parts—is not possessed naturally, even by individuals whose habitual posture and carriage as well as general muscular control are very good. They do not need it. But to overcome faulty postural tendencies and habits such ability is absolutely necessary.

Because of the great difficulty of doing these exercises with full vigor without increasing lumbar hyperextension and thus cultivating a "hollow back" posture, the progression has to be very slow and carefully graded. At first, even attempts to assume a good fundamental standing position will induce this fault. This is still more the case in such derived starting positions as those reached by arm bending (with hands at the shoulders and elbows close to the side of the body), by placing the hands behind the neck, by arm raising sideways or by raising the arms straight overhead.

At first the movement should be called "backward bending of head," in order to suggest to the pupils the right kind and localization of muscular effort. When the chin is kept from being tilted upward the backward movement of the head is really due to an extension in the upper thoracic spine. As the pupils learn to do this movement correctly and with full vigor with the arms in the various derived positions, the name may be changed to "backward arching of trunk," giving the pupils to understand that the movement is the same, but is now to be done with the utmost effort to arch the whole upper back without participation of the lower. But constant watchfulness on the part of the teacher is needed to see that the majority actually succeed in doing the movement correctly. If not, then return to a simpler form. It may be that the class can never be given the most advanced types, such as backward arching of trunk with the arms overhead and one foot in front. The type done at the bar stalls, called true arch flexions (or span bendings) in Swedish gymnastics, is still more precarious as regards liability to produce hollow back. It is doubtful if its use is justifiable in any but exceptionally well-trained classes.

The free-standing arching movements are best done singly on command for some time. Not until the class has reached a point where the average pupil has good control of the back and abdominal muscles, and is accustomed to the "definite" style of work, is it safe to attempt doing arching movements rhythmically. A fair degree of correctness of execution may then be attained by alternating the "backward arching" with foot placings or arm movements. The best rhythm will be the uneven, syncopated kind, which strongly contrasts the slow, carefully controlled arching movement with the quick arm or leg movement; the whole exercise being guided by constant stimulations and admonitions. To head off the common tendency to assume a poorer position after the return from the "backward arching" than obtained before the beginning of the movement, try to have the class retain the "arch" position, with only slight muscular relaxation, during the "return" count. There will always be sufficient unconscious relaxation during the intervening arm or leg movement to give opportunity for an appreciable "backward arching" at each repetition.

When repeated rhythmically a reasonable number of times, and each part of the exercise is done with the proper vigor and speed, or steadiness, the compound and combined arching movements represent a not inconsiderable amount of muscular work. Thus they may be made to contribute in a moderate degree to the general organic stimulation produced by the lesson as a whole.

(4) *Compensatory Movements.*

This group comprises two types of exercises: forward and forward-downward bendings of trunk; knee-upward bending and leg flinging forward. These may also, and more specifically, be classified respectively as back exercises and abdominal exercises. Because of their effects on the lower spine they are used as supplementary or compensatory exercieses to the arching movements and immediately follow them in the lesson. By inducing a marked straightening and even reversal of the posteriorly concave curve of the lower back they (1) alter, temporarily, the conditions of pressure and tension of joint surfaces, intervertebral disks, ligaments, nerves, etc., in this region. The circulatory conditions of the parts are also undoubtedly influenced favorably by these changes in pressure and tension. All this gives a sense of relief from the strain and fatigue incident to the greater or less degree of lumbar hyperextension inevitably induced by the arching movements. (2) They supplement and emphasize the training in localized muscular control furnished by the arching movements.

In arching movements correct execution calls for maximum contraction of the upper back muscles with minimum participation of the lower erector spinæ. The compensatory exercises necessarily require as much relaxation as possible of the lower back muscles, while at the same time efforts are made to maintain the upper back muscles strongly contracted. Only by so doing can a forward-downward bending of trunk be carried to the utmost limit with the upper back straight and the head, chest and shoulders in good fundamental position. The knee upward bending (or knee raising as high as possible) and leg flinging forward accomplish the same purposes in a different way. Whenever the femur moves forward-upward the pelvis is tilted to a more horizontal position. This can only be done by a movement of the nature of flexion in the lumbar spine, amounting to a straightening or even reversal of the natural curve (hyperextension). To allow such a straightening the lower erector spinæ must yield, while the effort to keep the upper back, chest, shoulders and head from "slumping" necessitates strong contraction of the upper back muscles. This type of exercise also strengthens the abdominal muscles, on whose tone and control a good posture in the lower back largely depends.

As regards training of localized muscular control, then, the compensatory movements may be said to do negatively what the arching movements aim to accomplish positively. Or, to put it differently, arching movements train the power to localize *contraction* of and tend to shorten the upper back muscles; compen-

satory movements aim to increase the power to localize *relaxation* of and tend to lengthen the lower back muscles. Each tends to increase mobility in the spine in directions opposite to the natural curves, and in general to straighten the whole spine—to "take in the slack" of the muscles and fibrous structures on the convex side of the curves.

The importance of having in each gymnastic lesson at least one, and preferably more than one, exercise of the type designated as compensatory movements, must be obvious to any one who has observed the hollow back position assumed by pupils whenever strong contractions of the back muscles are called for. This occurs not only in the fundamental position and in arching movements, but in shoulder blade and general back exercises, in trunk twistings and side bendings, in charges and in many apparatus exercises. In fact the bulk of gymnastic work, when done with vigor, strongly tends to produce this undesirable posture. This tendency is due to several factors, chief of which are:

1. The inability of everyone (who has not been specially trained) to contract the upper back muscles without contracting the whole erector spinæ group.

2. The preëxistence of an anteriorly convex curve and free mobility in the direction of hyperextension in the lumbar spine. In many young people this curve and mobility are not only exaggerated, but located higher up than normal, including the lowest two or three thoracic vertebræ.

3. The greater mechanical advantage of the lower back muscles, pulling, as they do, over a concave surface, while the upper back muscles are stretched over a convex surface.

4. The erector spinæ is a much thicker and more compact bundle of muscle here than higher up. Its tone is also greatest in this region.

5. There is no very direct muscular mechanism to antagonize this tendency to excessive hyperextension at the dorso-lumbar junction, the abdominal muscles being the only group which can be so considered. These do not affect the upper lumbar and lower thoracic as much as the lower lumbar spine. The diaphragm and psoas muscles contribute, rather than otherwise, to the hyperextension by pulling forward the vertebræ to which they are attached.

6. In gymnastic positions with the arms stretched backward, and especially overhead, the latissimus dorsi is probably also a factor. This is particularly apt to be the case when the range of motion in the shoulder joint is limited, due to tightness of the muscles and fibrous structures in front, and efforts are made to force the arms backward or to expand the chest.

While gymnastic exercises like the compensatory and abdominal movements cultivate the muscular strength and control necessary to resist the tendency to excessive hollow back in gymnastic work, they do not adequately train the *sense* of correct posture and proper weight distribution in the lower trunk region. Such correct posture sense is a prerequisite for the right application of muscular efforts, in ordinary movements and positions as well as in gymnastic exercises. For the acquisition of this sense of position and the kind of muscular efforts needed, individual assistance and guidance by the teacher are most effective. Such help may very well include forcible manipulation, preferably before a large mirror, so that the pupil can both see and feel what he has to do.

Besides their special effects on posture, in developing and strengthening the back (or abdominal) muscles and increasing their control, the exercises in this group represent a considerable quantity of muscular work. The majority of the forward and forward-downward bendings readily lend themselves to combination or alternation with arm movements, foot placings and even knee bending. The knee upward bendings and leg flingings forward have all the characteristics of abdominal exercises and to some degree those of leg movements. All are suitable for rhythmic repetition and so may be made to contribute largely to the general organic effects of the lesson. For this reason, too, it is wise, if time permits, to have more than one representative of this group in each lesson.

(5) *Lateral Trunk Exercises.*

This is one of the three groups of trunk exercises, the other two being the abdominal and the back movements. As its name implies, the localization of the muscular action is chiefly in the waist or loin region. There being no lateral trunk muscles, properly speaking, the contiguous abdominal and back muscles of each side act together in such types as side bending and leg moving sideways; while in trunk twisting the different layers of oblique abdominal muscles on each side act in conjunction with the oblique back muscles.

Exercises of this group thus involve fairly wide distribution of muscular action. When of a vigorous character (and most of them are or may be) the total quantity of muscular work is therefore considerable. The organs of circulation and respiration are correspondingly active. Besides these general effects, lateral trunk exercises influence the various organic functions in special ways. The circulation in the abdominal cavity and especially the portal flow is stimulated and aided by the alternate compression and stretching of the organs. These variations of

pressure and tension also mechanically stimulate the intestine to more vigorous peristalsis.

The conditions under which breathing takes place are modified. Respiration is apt to be interfered with owing to the powerful contraction of the abdominal muscles in some of the exercises, notably trunk twistings. This increases the intra-abdominal pressure and hinders the descent of the diaphragm. Inspiration must therefore be accomplished mainly by movement of the ribs. The change of form of the thorax in many of the exercises requires all or nearly all of the mobility of which the chest is capable, leaving but a slight range for purposes of breathing. The tension of the abdominal muscles and of those oblique back muscles attached to the ribs tends to reduce still further the mobility of the chest, at least on one side at a time. While free respiration is thus hindered at the extreme limit of each movement, the effort to maintain it gives good training to the inspiratory muscles, teaches the individual to manage his breathing to best advantage under difficulties, and cultivates the mobility of the chest, all parts of which are made to do full duty during the different phases of the movement. Because of these difficulties, pupils are apt to hold their breath for considerable periods and need frequent reminders from the teacher to try to breathe deeply and evenly.

The development and increased control of the abdominal and back muscles is another valuable feature of lateral trunk exercises. The average person of sedentary habits is greatly in need of this kind of training. The ordinary movements of daily life rarely call for complete or varied action of these large and important muscle groups. This is particularly true as regards the abdominal muscles, which are so often undeveloped, relaxed and covered with fat.

In view of the many valuable effects—general and special—of lateral trunk exercises, at least one and preferably two or more free-standing movements of this class should be given in each lesson, especially when there is little or no apparatus work. The principal types—side bending and twisting—may be combined and alternated with arm movements, foot placings, charges, lunges, and other trunk movements, as well as with each other, thus offering great possibilities for variety and a carefully graded progression. Leg raising sideways offers less opportunity in this respect, being limited to variations of speed and range, to combination with a few arm movements, and alternation or combination with jumps on toes or dancing steps.

Besides the free-standing types mentioned, many forms of jumping, tumbling, vaulting, climbing and other apparatus work embody some or all of the features of lateral trunk exercises.

So do such athletic exercises as shot put, hammer and discus throw, hurdling, pole vaulting, paddling, etc. These are often of an even more powerful character than the free-standing movements.

(6) *Abdominal Exercises.*

In these the localization of the work on the abdominal muscles is more direct and exclusive than in any other class of exercises. The principal types are knee-upward bending, leg raising forward and leg circumduction from the standing, hanging and lying position; trunk raising from the lying to the sitting position with feet fixed or, what is the same thing, leaning backward from the sitting position and returning to it. Another type is backward leaning of the trunk while in the kneeling position, on one or both knees. Moving the arms forward upward and forward downward with "chest" weights in the hands and the body in a lying or reclining position (as on the quarter circle) may also be included. So may the prone falling position (front leaning rest) as well as many forms of jumping, tumbling, vaulting and climbing.

In the majority of these exercises the thighs are flexed on the trunk, or the trunk on the thighs, against the resistance of gravity. The action of the hip joint flexors under these conditions is always associated with contraction of the abdominal muscles. Under certain conditions of fixation the pectorals and anterior neck muscles similarly tend to act in conjunction with the abdominal muscles or *vice versa*. Indeed, all the anterior muscle groups may be considered parts of one great system of muscles whose associated action tends to produce a general "curling up" of the whole body. In the majority of the types of exercises enumerated, however, it is desirable to resist the effect of the contraction of pectorals and anterior neck muscles (by vigorous contraction of the upper back muscles) and to localize the movement as much as possible to the hip joint. The contraction of the hip joint flexors tends to tilt the pelvis forward (increasing its obliquity) and to produce excessive hyperextension of the upper lumbar spine. The associated contraction of the abdominal muscles not only prevents this, and steadies the pelvis, but even flexes it on the trunk (decreasing its obliquity) through a straightening (and reversal where that is possible) of the natural curve in the lower spine.

In their general organic effects, associated with powerful contraction of large muscle groups, the abdominal exercises are on a par with the lateral trunk movements. Their special effects on the abdominal organs are also similar, but more pronounced. The

same is true as regards increasing the strength, tone and control of the abdominal muscles. In this connection the exercises may even be considered as supplementary to the compensatory movements in posture training of the lower trunk and hip region.

Like the lateral trunk movements, the abdominal exercises tend also to hinder free respiration. But whereas the former compel expansion of different parts of the chest during different phases of the movement, the latter always tend to depress the chest, to round the upper back and to draw the head forward. To prevent these faulty tendencies it is necessary, as already stated, to contract the upper back muscles with considerable vigor. Thus, indirectly, the abdominal exercises contribute to posture training in the upper part of the body by offering difficulties in maintaining good posture in that region.

Because of the relative scarcity of free-standing types of abdominal exercises and a rather limited progression within each, it may not always be feasible to have a representative of this group in each lesson without frequent repetition of the same types, viz., knee upward bending and leg flinging forward (or forward-sideways), backward leaning of trunk from the kneeling position, and prone falling position with or without foot placing forward and backward. Letting a whole class lie down on the floor and in this position giving leg movements is, of course, also feasible. When no apparatus work is given, at least one of the above types should be included in the lesson. When apparatus work is a part of the lesson, many of these exercises should be of a kind embodying the valuable features of the abdominal group.

(7) *Back and Shoulder Blade Exercises.*

In these the work is localized on the back muscles. According as the emphasis is placed chiefly on the extreme contraction of the upper back and posterior scapular muscles, or the work is more uniformly distributed over all the muscular groups of the back, including the hip joint extensors, the exercises of this group may be respectively designated as shoulder blade movements and general back movements.

A. *Shoulder Blade Movements.* Under this head come the various arm movements, such as arm bending and stretching sideways, diagonally upward, upward, forward, backward—both arms in the same direction or each in diverse directions—quick, or slow and resisted; forward bending and sideways flinging of arms; half sideways bending of arms (to side horizontal, elbow half flexed); arm raising or flinging forward, sideways, forward-upward, sideways-upward; arm circles large or small, quick or

slow; swimming movements with the arms; placing hands on hips, behind neck or over head; changes from one of the positions reached by these movements to another. The difficulty, intensity and total amount of muscular work in these movements are increased by doing them from a position with the body inclined forward, as by being bent at the hips (prone standing position) in charges; in lying face downward on the floor, or supported by a bench under the thighs (prone lying position). They may also be combined with leg movements, arching and compensatory movements, or alternated with these and almost any other free standing movement.

Their main purpose, aside from the general one of contributing to the total amount and greater complexity of the muscular work, is to increase the strength, endurance, control and tone of the upper back and scapular muscles, to cultivate the posture sense, and thus to furnish the basis and means for effective posture training in the upper part of the body. In this respect they resemble and supplement the arching movements, to which they are closely allied.

Fixation of the Shoulder Girdle. The habitual position of the shoulder girdle relative to the thorax is largely a matter of balance of tone on the part of the anterior and posterior scapular muscles. If the posterior muscles are slack and the anterior are in a relatively higher state of tonic tension, the latter will draw the scapula away from the spine and the point of the shoulder forward. The weight of the shoulders, naturally tending forward, acts with greater leverage the farther this forward displacement is allowed to go. In movements of the arms in front of the body the pectorals, in conjunction with the serratus magnus, will move the shoulder girdle forward as far as it will go, before the full force of the pectoralis major is exerted on the arms. If the posterior muscles are very slack (long), the final checking of the forward movement of the shoulder girdle will devolve largely on fibrous structures—ligaments and fasciæ. Such checking by passive tension on muscles and fibrous structures may be called *passive* (ligamentous or natural) fixation of the shoulder girdle.

The shoulder blade movements enumerated should be so defined and executed that there is a minimum forward displacement (or upward, as the case may be) of the shoulder girdle in movements of the arms. That means vigorous and sustained contraction of the scapular depressors and adductors throughout the exercises, and may be called *active* (muscular or artificial) fixation of the shoulder girdle. The resulting increased tone and endurance of the posterior scapular muscles would insure a more posterior position of the shoulder girdle in passive fixation during arm movements as well as a better habitual posture, not only

of the shoulders, but of the upper back and chest as well. It is another case of "taking in the slack" on the convex side.

B. *General Back Movements.* These comprise forward and forward-downward bending of trunk from the standing and prone lying position, the latter with support under the thighs (feet fixed); forward and oblique charges, reverse and toe-support charges and forward bending added to these; the fall-hanging and front rest positions and related exercises, as well as a number of suspension exercises and vaults. All involve active contraction of the whole muscular region of the back and the posterior hip joint muscles (extensors). These are active in efforts to maintain the extended position of the whole body against gravity, or are partly relaxed at the lower level to permit flexion at the hip and in the lumbar spine, while those in the thoracic region remain completely contracted to keep the upper spine straight. In returning to the extended (erect) position against the resistance of gravity they all contract equally.

The difficulty of the exercises and the intensity of the muscular work will depend on the degree of projection of the body beyond the point of support and on the height at which the arms are carried. Both increase the weight leverage. The horizontal position in forward bending represents the greatest weight leverage. The higher and more difficult positions of the arms not only raise the center of gravity but also increase the static action of the scapular and upper back muscles. When arm movements are added, the intensity of the muscular work is still further heightened. All these factors should be taken into account in the progression of these exercises and in deciding where to place them in the lesson.

The purpose of general back movements is to develop, strengthen and increase control of all the back muscles; to favor the correct growth of the spine; to correct minor lateral deviations; to maintain and increase mobility in the directions least cultivated by the ordinary movements of daily life—extension in the upper part, flexion in the lower. The intensity and wide distribution of the muscular work also represent considerable organic stimulation. These general effects are enhanced by rhythmic repetition alternating with foot placings or arm movements.

(8) *Charges.*

Forward and oblique, reverse and reverse oblique charges (feet about three foot-lengths apart, body inclined about 45 degrees and *in line with the rear leg*) have already been mentioned under lateral trunk and back exercises. They have many of the char-

acteristics of these groups, as well as of leg movements, and are therefore truly all-round exercises.

On account of the varied and widely distributed muscular action, charges admirably fulfill the purpose of general exercise. They are also very valuable as a means of training the kinesthetic sense and the power of coördinating the action of trunk and leg muscles, requiring, as they do, accurate alignment and quick readjustments of weight distribution. Because of their difficulty and vigorous all-round character, as well as their appearance, they are usually interesting to pupils. But in order to insure correct execution they should not be given too early, and the progression should be slow and careful. As the possibilities for variations are considerable—by combining and alternating with arm and trunk movements—this type of exercise may be represented more than once in each lesson without excessive repetition of each variety.

(9) *Balance Exercises.*

As the name implies, the chief feature in this class of exercises is the maintaining of equilibrium. The types used are positions or movements in which the base is progressively reduced and the center of gravity raised. Such are: standing on the toes with toes together, or one foot in front of the other (close toe standing and walk toe standing positions); or on one foot with the other raised forward, sideways or backward; head, arm or leg movements (including heel raising and knee bending) from these positions; the toe-support charge position, and raising of the rear leg from that position (horizontal half standing position); forward bending and side bending of trunk on one foot, the other leg in line with the trunk; leg raising from the side falling position (side leaning rest); opposite arm and leg raising from the prone falling position (front leaning rest); balance marching; walking forward, backward and sideways (with various modifications) on the balance beams.

While the muscles of the legs are usually the principal groups involved, all parts of the muscular system, especially the large groups of the trunk, are more or less active. There is constant interplay of opposing groups. Sometimes the action is brief and only very moderate. Again it may be quite violent in efforts to recover the equilibrium when the oscillations have become too large.

Although the distribution of the muscular work is usually over wide areas, the exercises are ordinarily not repeated a sufficient number of times to produce any marked organic effect. This is true even when they are done rhythmically (as it is possible

to do in some types). But in such cases the rhythm should be slow, the positions being held relatively long. Otherwise the exercise represents too little difficulty in keeping the balance.

The chief value of exercises of this kind consists in the training of subjective motor control. They cultivate the sense of equilibrium and the kind of muscular coördination required to make quick and accurate adjustments of weight distribution, to check promptly too great or sudden deviations from the proper alignment and poise of the various segments of the column.

When many of the exercises in the lesson offer some degree of difficulty in maintaining a steady balance or require frequent and quick changes of weight distribution, as is the case in charges and in many movements done from the walk standing or close standing positions, special balance exercises may be dispensed with. Often, however, a balance exercise of not too great difficulty may with advantage be put between two vigorous trunk movements, serving thus as a relief from or break in what might otherwise be too long or severe a muscular exertion.

The heel raisings and knee bendings from more or less difficult starting positions may be practiced at first as balance exercises and later, when they offer little or no further difficulty in regard to balance, they may be used as leg movements in the beginning of the lesson. The side bending and forward bending of trunk while standing on one foot, as well as the toe-support charge and horizontal half standing positions, may also be considered advanced lateral trunk and back exercises, respectively, and take the place of representatives of these groups in the lesson.

(10) *Suspension Exercises.*

In these the body is suspended on the arms, the typical exercise being the (active) hanging position. Whatever modifications or additional movements are made from this position, such as arm bending, momentary suspension on one arm in hand traveling, swinging, leg movements, etc., the essential features are always more or less the same. These are: a marked chest expansion; at least a moderate straightening of the thoracic spine; vigorous action of the flexors of the elbow, of the muscles which bring the arm down to the side (latissimus, teres major and pectoralis major), of the rotators downward, adductors and depressors of the scapula (rhomboids, pectoralis minor and trapezius), as well as of the deltoid and abdominal muscles.

The chest expansion is caused partly by the straightening of the thoracic spine, partly by the great tension (passive or active) of the pectorals and latissimus. The straightening of the thoracic

spine is due both to traction of the lower part of the body and to the contraction of the erector spinæ associated with the action of the posterior scapular muscles.

The breathing takes place under the same modified conditions as occur in the arching movements. The thoracic walls being [illegible] diaphragm in the [illegible] of the respiratory movements. [illegible] descent in inspiration takes place against increased intra-abdominal pressure, the passive tension or active contraction of the abdominal muscles. Besides these modified general conditions of breathing, many of the more difficult exercises in this group require (or strongly tempt to) a temporary cessation of respiration altogether. This is always apt to occur when extreme muscular efforts are made, especially in movements of the arms or trunk. The chest is then made rigid by the contraction of the abdominal muscles, forcing the diaphragm to ascend and compress the air inside the chest, the glottis having been previously closed. This gives the muscles attached to the chest a fixed point from which to act on the arms. Such tendency to hold the breath should, of course, be resisted and full breathing insisted on in all but the most severe and difficult movements. In the latter the performer may often be obliged to time his breathing to correspond with a given phase of the exercise in which a partial relaxation of the muscular effort is feasible. Thus, by proper management of the respiration under difficulties, valuable training and increased efficiency of the breathing mechanism may result.

Many of the exercises of this class represent fairly violent muscular work of an intermittent character—comparatively brief and powerful efforts alternating with relatively long intervals of rest. This is due to the fact that the necessary apparatus can often only be used by one, or at most a few individuals at a time. By the use of multiple apparatus, or by selecting such exercises as can be done on ladders, suspended parallel bars and the boom (allowing the simultaneous performance of several pupils) this difficulty may be obviated to some extent and the continuity of the work increased. In the "pure" types of suspension exercises, such as the simple hanging position and arm bending or hand traveling in this position, the work is of a somewhat local character. The resistance (the body weight) to be overcome by the working muscles is comparatively great, hence repetitions are not apt to be numerous.

Besides these typical or "pure" suspension exercises, there are many which are of a more general character, embodying some of the features of abdominal, lateral trunk, back and even leg exercises. Such are, for example, knee upward bending, leg

aising and leg circumduction from the hanging position; climbing on ropes, poles or window ladders; complex movements on horizontal bar; the fall-hanging position and its modifications; combined arm stretching and bending with knee bending and stretching while standing on one or both feet and grasping a bar, rope, ring, etc. (these mixed types may be easier or more severe than the pure types in their local effects; thus the fall-hanging position [body inclined and part of the weight supported on the heels] is easier as regards the work of the muscles of the shoulder girdle and as regards breathing, but the additional action of the lower back and posterior hip muscles makes it an exercise of more general character. The same is true of the pull-up with help of the legs. For this reason such types may be used as preparation for the more typical suspension exercises when the necessary strength in the arm and shoulder muscles is lacking. On the other hand, such exercises as starting swings, circles, upstarts, etc., represent more violent local as well as more widely distributed muscular work, owing to the simultaneous or alternating powerful contraction of the abdominal or back muscles.

In general, it is not wise to practice exercises of this class (at least the more violent types) without some preliminary "warming up" in the shape of free-standing movements or chest weight exercises. Otherwise muscular strains and distress of the circulatory and respiratory organs are apt to occur, followed by unsatisfactory general feeling.

Among free-standing exercises the arm bendings and stretchings and some of the arm flingings may be considered related to suspension exercises. They produce some of the same effects in a mild way and are somewhat similar in their muscular mechanism. But they can scarcely be considered the equivalent of suspension exercises in any true sense.

Summary. The suspension exercises are, then, characterized by their developmental effects on the upper trunk muscles and especially on those of the shoulder girdle and upper extremity by their tendency to strengthen the abdominal wall, to increase the mobility of the chest and the efficiency of the whole breathing mechanism; by their corrective postural effects on the spine—lateral as well as antero-posterior; by their relative high intensity and considerable total quantity of muscular work. They are also conducive to a kind of skill or agility which may be urgently needed in some emergency. When carefully defined and correctly executed they are most valuable exercises and should, if possible, be represented in every gymnastic lesson.

(11) *Arm Support Exercises.*

These comprise the front rest, back rest and cross rest positions and their derivations. While employing the same muscles as those principally active in the suspension exercises (with the exception that the triceps takes the place of the biceps and the deltoid is inactive), they do so in an entirely different way. The pectorals and rhomboids are especially active, and unless the latter are reënforced by adequate and well-controlled action of the trapezius and latissimus, the pectorals tend to contract excessively with resultant malposition of the shoulder girdle, chest and upper back. The arm support exercises should not, therefore, be classed with suspension exercises, but rather be put in a group by themselves, even though it is true that they often form a component part of many complex suspension exercises—especially on the horizontal bar and rings. Because of their relative difficulty and their vicious tendencies they should be used with caution, and not until the proper strength and control of all the upper trunk muscles, especially the scapular, have been acquired. This applies particularly to such types as circles, feints and the more difficult feats on the horse; traveling, repeated swings, "dips," etc., from the cross rest position on the parallel bars; and also many similar positions and movements on the horizontal bar and rings. The majority of such exercises are conducive to an undesirable kind of muscular development as well as faulty posture, and their practice should be discouraged.

On the other hand, arm support exercises find their most useful and unobjectionable application in vaults on the different apparatus. For in these the support on the arms is only brief, and the work of the shoulder blade muscles is materially aided by the momentum gained in the spring from the floor. This makes the maintenance of correct position of shoulder and chest less difficult.

(12) *Jumping and Vaulting (precipitant exercises).*

The common characteristics of exercises of this class are: Great intensity and wide distribution of muscular work, which, while usually somewhat intermittent, may and should be made continuous enough to produce marked organic stimulation. The various types also represent many or all of the special features of leg, back, abdominal, lateral trunk and arm support exercises, while some types are even related to suspension exercises. They all demand and cultivate a high degree of coördination—well-timed and properly gauged muscular efforts, involving accurate judgment of height, distance and bodily momentum, as well as a keen

sense of equilibrium. In this last respect they may be considered advanced balance movements.

The training of coördination which is such a pronounced feature of this class of exercises relates not only to the proper position of the parts of the body with reference to each other, but of the body as a whole with reference to space or to external objects. It is subjective motor training, but differs from that furnished by free-standing gymnastic exercises in that the body as a whole is moving. This involves many factors which are either absent or only present to a slight extent in most free-standing exercises. Such are, for example, judgment of height and distance to be traversed by the body; of speed and bodily momentum to be developed and managed to best advantage; of the best weight distribution over the point of support and the proper sequence of widely different muscular efforts in order to gain the most advantageous leverage, to increase or deflect momentum, to control the poise of the body, etc. Of course, the eye is a large factor in the complex nervous processes which enter into these coördinations. But the kinesthetic sense (a term used to designate the perception of sensations conveyed by the numerous and varied afferent nervous impulses from the muscles and joints) is even of more importance than the sense of sight. The training of this kinesthetic sense is a feature of all gymnastic exercises, but more so in this than any other class.

The result of abundant practice of this class of exercises should be an increase of agility. With this is meant ability to manage the body when in motion, on the feet, or propelled by the feet from the ground, with or without the aid of the arms. When the legs alone are used to give the body the necessary momentum to traverse a given space we call it *jumping*. When the arms are used to assist in propelling or in guiding the movement we call it: (1) *Vaulting*, if the arms are used to support the body; (2) *Swing-jump* (underswing, hang-jump or some such term) when the body is momentarily suspended on the arms.

The different types of exercises belonging to this group are: (1) Running and standing high and broad jumps; hop, step and jump; sideways and backward jumps; all to be executed in specified form while in the air and on landing, as well as for height or distance. (2) Vertical vaults such as (front and rear) squat and straddle vaults and their combinations (wolf vault); knee vault; front (sheep) vault; jump (thief) vault; the horizontal vaults—face, side and back (and oblique) vaults (or front, flank and rear vaults as they are usually called). These may be executed on the side or long horse, buck, vaulting box, parallel bars, saddle boom, low horizontal bar or boom; with or without a preliminary run (preferably with). In all there is only a momentary

or relatively brief period of support on the arms. In the vertical vaults (and the mounts of the same name) the briefer the period of support the more does the action of the arms resemble the spring of the legs, the more animated and vigorous does the exercise become and the greater are the chances for an erect position of the whole body, with good posture of head, chest and shoulders during its performance. (3) Standing or (preferably) running swing-jumps with the use of flying rings, ropes (one or two), horizontal bar, boom, double boom, suspended parallel bars and horizontal ladder. Here the body is momentarily suspended on the arms, following the spring from the feet. (4) Mixed types of vaults and suspension exercises, such as side, back and oblique vaults on the double boom, with suspension on one arm and support on the other—very valuable and interesting exercises of a truly all-round character. (5) Elementary and more advanced tumbling, such as forward and backward rolls, dives, headspring, handsprings, cartwheels and somersaults.

In general, the muscular efforts in all these exercises are widely distributed, relatively violent and of short duration, with comparatively long intervals of rest. If the efforts succeed each other too rapidly and are continued for any length of time, the limit at which circulation and respiration can keep pace with the muscular work is soon reached. It is not wise to carry the exertion to the point of extreme breathlessness. Too large doses of this type of work are also liable to produce excessive fatigue. In class teaching, however, the danger of overdoing is not very great, as it is usually found difficult to subdivide the class into sufficiently small squads to allow too frequent repetitions of the exercises. The trouble is more often the other way—too large squads, inadequate leadership and, therefore, too long time between turns and not sufficient continuity of the work. But when teaching small groups, or in individual practice outside of class, the danger of overdoing should be borne in mind. Of course, pupils with weak hearts or abdominal walls should not be allowed to practice exercises of this class without careful supervision and guidance as regards kind and amount.

(13) *Running and Running Games.*

These may be classed with the preceding (as precipitant exercises) or by themselves. The latter is preferable. A short run may be used to begin the lesson, especially on a cold day, serving then the purpose of general stimulation or literally of warming up. Or it may be put in at (or just before) the end, and thus by emphasizing and "clinching" the organic effects serve as a fitting culmination of the lesson. This is highly desirable at all times

and especially when the jumping and vaulting exercises have been inadequate as means of organic stimulation, owing to lack of time, space, apparatus or proper leadership.

Systematic practice of running is undoubtedly one of the best means—if not the best—to improve "the wind," i.e., to strengthen the heart and respiratory organs, to increase the power of prompt and perfect adjustment of the whole circulatory system to varying degrees of activity—in short, to bring this most important of all bodily mechanisms to a high state of efficiency and to keep it so. Such efficiency is so intimately connected with, and basal to, the health and proper functioning of all other organs, that in a very real sense it is the conditioning factor and index of endurance, vitality and general bodily condition.

In view of the ease with which pronounced organic stimulation may be produced by running, and the comparative facility with which the amount and intensity of these effects may be gauged and regulated, as well as the almost universal availability of this form of exercise, no gymnastic lesson should be considered complete without it.

(14) *Respiratory Exercises.*

It may not always be desirable, or even safe, to dismiss a class while in a state of high organic activity—heart and lungs working hard, skin flushed and perspiring. If the jumping, vaulting and running have been vigorous and prolonged enough to produce such a marked general reaction, it is usually best to keep the class a few minutes more, until the circulation and respiration have begun to return to normal. This reduces the chances for accidents in the way of possible injury to weak hearts when taking a bath. (Where there are no facilities for bathing it is perhaps best not to carry the organic stimulation to a point involving too great activity of the skin.) To facilitate the return to a more quiet and normal bodily condition the lesson may be concluded with a few exercises of progressively diminishing intensity, and which at the same time call into use all the auxiliary forces of the circulation.

The kinds of exercises most suitable for this purpose are rhythmic leg movements such as ordinary marching, toe marching, and "balance" marching; simple heel raising and knee bending; the different arm raisings, rotations and stretchings in slow breathing rhythm, or combination of these with heel raising and knee bending. Simple deep and slow breathing, without any arm or leg movements, but preferably with a slight backward bending of head, is perhaps as effective a respiratory exercise as any. It may very well be the last, as well as the first, exercise of the lesson.

By the alternating contractions and relaxations of large muscular masses and the alternating flexion and extension in the joints involved in rhythmic leg and arm movements, the valvular mechanism in the veins of the extremities is made to do full duty, thereby reducing the peripheral resistance to be overcome by the heart. Similarly, the deep, measured breathing causes a more powerful thoracic aspiration—literally a suction exerted on the great veins entering the chest—than shallow, rapid breathing. All these factors aid the venous and lymphatic flow, supply the means for a greater output at each systole, and so materially ease or at least steady the heart's action. Blood pressure falls more gradually and evenly, and without the preliminary rise which probably always occurs when violent exercise suddenly ceases.

While breathing exercises do not cause more oxygen to be taken up by the blood passing through the lungs, as is popularly supposed (the arterial blood at all times being practically saturated with oxygen), they are valuable for many other reasons. Besides aiding the circulation they cultivate mobility of the chest; cause a free flow of blood and lymph in the more remote and less completely used portions of the lungs and so favor the nutrition of these parts; they lead to a straightening of the thoracic spine, and a strengthening of the muscles of inspiration; by the more complete descent of the diaphragm and the greater variations in intra-abdominal pressure they influence favorably the functions of the liver and other abdominal organs. They also give opportunity for training the whole breathing mechanism to efficient and economical action.

The arm movements, while not increasing the total capacity of the chest, undoubtedly lead to maximum expansion of the upper chest and encourage lateral costal breathing. In all these respects breathing exercises are most effective at a time when the body, as a result of vigorous exercise, demands plenty of air and the respiratory centers are extremely active.

4. The Content and Character of the Gymnastic Lesson.

A gymnastic lesson should not be merely a certain number of exercises chosen at random or on the spur of the moment, and arranged in a haphazard manner as the fancy or impulse of the teacher dictates. When that is the case loss of interest and dissatisfaction are sure to occur sooner or later. Nor is it advisable to use habitually and under different conditions standard collections of exercises or "drills," however well chosen and arranged they may be for a given set of conditions. The only occasion for continued practice of set and memorized "drills" is in cases where merely muscular exercise for the sake of organic reaction

is wanted, and when the class membership is fairly homogeneous and constant. But even under such conditions it will usually be found wise, for the sake of conserving interest, if for no other reason, to make the lessons varied and progressive.

When equal emphasis is to be placed on all phases of the work, the construction and progression of gymnastic lessons become one of the most important as well as most interesting parts of the teacher's work. Each lesson should then be the concrete expression of a definite hygienic and educational thought. It should embody the teacher's ideals, standards and special knowledge; it should represent his understanding of the conditions to be met and his best judgment of how the pupils' time and efforts are to be utilized to the fullest advantage.

While every class represents a special set of conditions to be met in the arrangement of each lesson, a few general principles are applicable to most conditions.

1. *Proper distribution of work.* Do not work the class so hard in the beginning of the lesson that a considerable number of pupils will be unable to do justice to the last part. Begin with work of moderate intensity and increase gradually. This applies to both general and local exercises.

If, for example, general organic work is begun too suddenly, or in too large doses, it might be necessary to slacken the pace after a while. Any such reduction in the rate of the muscular activity (except for very brief periods) means more or less of a loss of accumulated organic effects. The resulting cooling off and partial drying give rise to unsatisfactory general feelings, a sense of lassitude and disagreeable fatigue. From the standpoint of organic stimulation it is always most satisfactory to increase the quantity and intensity of the muscular work by gradual steps, and to finish the lesson with the class in a state of bodily exhilaration, with all the main functions—circulation, respiration and elimination—fairly active or just beginning to subside to normal. Then the bath is most enjoyable and refreshing, fatigue is less marked, or is so mingled with a sense of general well-being as to be pleasant rather than otherwise, and the danger of taking cold is lessened.

2. *Warming up.* Again, we might begin with exercises demanding short, violent, maximal efforts with comparatively long intervals of rest, as, for example, jumping, vaulting or climbing; or very powerful local exercises, such as strong abdominal or suspension exercises. Such a course would be inadvisable for several reasons.

In the first place, it is always more or less of a strain on the heart and arteries to have sudden, great demands made upon them. It takes a little time for the circulatory mechanism to

adjust itself to the varying needs of the organism. Sudden, violent exertion while the arterial tension is low and the heart is beating at a moderate rate and not very powerfully, may cause disagreeable subjective symptoms and is not beneficial to the heart and arteries. An illustration of this is the painful throbbing in the side and front of the neck so common after a violent exercise (for example, on the horizontal bar) has been performed without any preparation.

In the second place, the muscles do not work to good advantage under such conditions. To do their best work the blood supply of the muscles must be commensurate with the amount of work they are called upon to do. Such is not the case when the work consists of violent efforts at comparatively long intervals and without preparation. Under such circumstances disagreeable soreness and actual strain are very apt to occur. It has been suggested that the liability to strain may be due to a failure of all the fibers of the muscles to contract simultaneously, a small number or small portions of the muscles being a little ahead or behind and therefore pulling too hard and sustaining injury. However that may be, it is a fact that the peculiar kind of soreness which is felt immediately and often lasts a long time usually occurs when a violent local effort is made without any previous "limbering up."

The inadvisability of beginning work too suddenly, be it local or general, is universally recognized. Trainers of men and horses are well aware of the necessity for "warming up" before putting their charges into action. It is economical to expend a little energy in this way, because such preparatory work starts up the vital machinery and gets it running smoothly before being subjected to the real stress. Emotion may serve the same purpose, e.g., anger, fear or other excitement.

The element of coördination should also be considered. We cannot, for example, do delicate work immediately after violent exertion. On the other hand, it is more difficult to control momentum, make the right kind and amount of effort and coördinate properly in a difficult exercise without preparation than when preliminary work has been done. Gradual warming up and judicious distribution of the work are therefore of advantage from the standpoint of economy, less liability to strain, better effect on muscles and organs, better coördination, better work.

3. *Progressive organic activity as a guide and index of the rate of work.* In a quiet condition, such as obtains when sitting down, reading, etc., the bulk of the blood is in the cavities of the body—abdomen, chest, head. The venous and lymphatic circulations are sluggish. In order to do vigorous muscular work the bulk of the blood must be flowing through the muscles at a fast

rate and high pressure. This change of relative accumulation and increase in rate of flow and pressure begin to take place soon after active work has started; the muscular arterioles dilate and the local pressure (in the muscular arteries) rises (this is also true of the cutaneous vascular area), while the arteries of the great cavities, notably those of the abdominal cavity (the so-called splanchnic area), become more constricted.

In order to make this circulatory adjustment in the most satisfactory way, and always sufficient to correspond to the amount of work demanded from the muscles, the lesson is begun with exercises involving only a moderate expenditure of energy at any given moment, but of a continuous character (such as marching). These are followed by exercises of gradually increasing intensity, until the circulatory and respiratory organs have reached the rate of activity which corresponds to the greatest demands we intend to make on the muscles. This state of activity is then kept up for as long a time as seems wise or practicable. The lesson may then be concluded with a few exercises of less intensity, calculated to aid circulation and respiration and to help bring the body back to an approximately normal condition, without, however, losing the accumulated reactions—such as warmth, flushing, perspiration—to any considerable extent, unless special conditions so demand. Often the final tapering-off exercises may be omitted, the walking back to the dressing room, changing of clothes or undressing and taking a bath serving the same purpose.

Occasionally it may be advisable to begin more abruptly—e.g., with a short run—by way of stimulation, especially in cold weather. But do not make it too long.

The expenditure of nervous energy, represented by the amount of attention, coördination and "pure" mental work involved in the exercises also varies, but does not necessarily follow the curve of organic activity. For reasons which have already been discussed (see Order Exercises) it is generally advisable to begin fairly suddenly in this respect, giving work which demands considerable mental concentration, especially as regards attention. It is necessary thus to focus and stimulate the attention in order to produce the proper mental attitude and coöperation for the work that is to follow. Later it may be well to ease up a little in this respect, directing the mental efforts more to the actual doing of vigorous work than to alertness and readiness for rapid changes. The element of difficulty of coördination also varies, often being in inverse proportion to the intensity of organic action or localized muscular work, but in a general way there should be a progressive increase in this respect, the more complex and difficult exercises being placed near the end.

4. *Totality or all-round character of the gymnastic lesson.* It is generally better to have each lesson represent all-round exercise, rather than have a preponderance of one kind of work in one lesson and another kind in the next, and so on. Even if the time allotted is scant and the lesson in consequence must be short, it is always possible by careful planning and selection to have all the main features embodied in the different classes of exercises (described in a previous chapter) represented more or less adequately in each lesson. Rounding out a lesson in this manner not only gives greater immediate satisfaction to the pupils in the way of bodily sensations and reactions, and avoids excessive local fatigue, but also insures variety and so helps sustain attention and conserve interest.

When time allows, it is wise to have each one of the main groups of exercises represented, some of them—especially the various trunk movements—more than once. When repetition of any given class of exercises is deemed advisable, the types chosen should preferably be as different as possible. They may be given successively or alternate with representatives of other groups. The latter is usually preferable, as it facilitates proper distribution of the muscular work and the progressive increase in its intensity. Occasionally it may be advisable to give two or more exercises belonging to the same group successively in order to get sufficiently pronounced local effects without too much repetition of the same exercise. Or it may be done as a matter of convenience, e.g., in apparatus work. Here there are usually sufficient intervals of rest between the exercises to avoid excessive local or general fatigue.

The groups of exercises which it is most desirable to have abundantly represented usually include a number of widely differing types, or types of an all-round character. Such is the case, for example, in the groups called Compensatory exercises, Back movements and Charges. It is also true of so-called "mixed" Suspension exercises, such as climbing on ropes and ladders, and of Jumping and Vaulting. Aside from emphasizing some very desirable features more or less neglected in ordinary activities, repeated occurrence of such exercises may be made to contribute to the all-round character of the lesson.

5. *General lesson plan.* When the amount of time and the equipment are such as to allow a complete and elaborate lesson, including apparatus work, some such general plan as that used in German gymnastics and also more or less in Y. M. C. A. work seems on the whole most satisfactory and best suited to the conditions in this country. Such a plan would comprise at least two, sometimes three or four, main divisions of the lesson,

viz., marching, free-standing exercises, apparatus work, a run or running game or a dance.

The amount of time allotted to each division will, of course, vary with the age, sex, interests, etc., of the class, and with the total amount of time given to the lesson. In schools and colleges where from thirty-five to forty-five minutes of actual working time is available, from five to ten minutes might profitably be spent on marching, twelve to eighteen minutes on free-standing exercises, twelve to eighteen minutes on apparatus work, and five to eight minutes on the final run, marching and breathing exercises. A game or a dance would usually take more time than a run. This might be gained by correspondingly shortening one or all of the other divisions. When there is no apparatus, the time given to the other parts might be increased. Or a game of vigorous character or some form of athletic competition could be substituted.

6. *Arrangement.* For reasons already stated some lively marching, when feasible, seems to be the most suitable introductory exercise. This is followed by a series of from seven to sixteen free-standing exercises, individually of as varied character but collectively as comprehensive as possible. Indeed, this series should in itself be a complete though more or less abbreviated lesson.

While serving partly the purpose of preparation—warming up—for the more powerful apparatus exercises, this preliminary series of free-standing exercises should be so selected, planned and taught as to emphasize and give large returns in posture and general subjective motor training. It is through these free-standing, definite, more or less localized movements, that kinesthetic sense training (especially as applied to posture), that localized muscular control and harmonious muscular development, are chiefly to be attained. In these *ensemble* movements, too, the spirit of coöperation and united group action is fostered, the attention and will are trained and pupils are encouraged to habits of discipline, order and alacrity. In striving to make the exercises effective in all these respects, the teacher finds scope for all his technical knowledge and teaching skill, all his enthusiasm and vitality, in short, for the fullest expression of his whole personality.

7. *The outline of the series of free-standing exercises* has been indicated in the discussion of the different classes of movements. Their order and sequence are approximately the same as that in which they were enumerated. A Leg movement or two, preferably combined with arm movements, seems the most suitable way to begin the series, because exercises of this class are

especially effective in equalizing the circulation, and also because they can be presented and executed in a brisk and lively manner and so get the pupils into the work most readily. After these an Arching and then a Compensatory movement fit in very well, the former by way of suggesting good posture, compelling a general straightening or stretching and good chest expansion; the latter similarly inducing a limbering up and straightening of the lower back, as well as contributing to the gradual increase of general muscular work, especially when repeated rhythmically. After this the order is immaterial; however, a Lateral Trunk exercise seems most satisfying at this point. Next may follow a Shoulder Blade exercise (e.g., arm bending and stretching), then a Balance exercise, an Abdominal, a second Lateral Trunk and a General Back exercise or a Charge or other all-round movement; finally a toe jump, a run in place or a free-standing jump and then a Breathing exercise to conclude the series.

8. *Modifications.* It will not always be feasible or even desirable to use as many free-standing exercises in one lesson as indicated in the preceding paragraph. If the majority of the movements are well executed and repeated rhythmically a considerable number of times, the quantity of muscular work represented by such an elaborate series might easily exceed the strength or endurance of the class. In any case such a series would take at least twenty minutes to teach adequately. It would be suitable for a lesson in which there is to be no apparatus work, or possibly as preliminary work in a lesson with apparatus for strong, well-trained classes (of young men, for example), in which there would be no question of ability to stand hard and fast work. But ordinarily a series of from nine to twelve movements is sufficient. Occasionally it may be necessary to give even a smaller number. One introductory Leg and Arm movement, instead of two, would then be sufficient. The special Shoulder Blade, the Balance or the General Back movement, one or all, or the Jump and Breathing exercise may then be omitted. The all-round character of the series may still be preserved by choosing types and combinations which embody the features of several classes of movements. This is not difficult when the principles of combination and alternation of definite rhythmical exercises are properly applied.

9. *Variety in selection, combination and sequence.* While it is of advantage to have some such general plan or outline in mind as a guide in the selection and arrangement of the free-standing exercises, the exact order and sequence in which the representatives of the different groups are arranged (at least after the Compensatory movement), need not be constant. In fact, it will necessarily be varied if good progression and proper

distribution are given due consideration. Then the order will be determined by two main factors. The first of these is the relative intensity of the exercise, its suitability with reference to progressive organic stimulation. The other may be summed up in the one word variety. Make the selection and arrangement such that each exercise shall be strikingly different from the preceding and following. Vary the style, the type, the muscular localization, the rhythm and even the appearance of successive exercises. If for any reason it is necessary to have two or more which closely resemble each other, place them as far apart as possible. This applies particularly to exercises in which posture training is emphasized. These are always sharply localized movements, often done slowly, generally on command (at least in the beginning), and positions are or should be well sustained for longer periods of time than in any other exercises. They are difficult of execution, require earnest and discriminating effort on the part of the pupils, careful guidance, firm insistence and strong stimulation on the part of the teacher. To have several such types in succession would be both tedious and locally fatiguing to the pupils, as the muscular localization is very similar in most of them. It is therefore of advantage to distribute exercises of this type judiciously through the lesson, to precede and follow them by lively and more general exercises.

The above applies also to any new or difficult exercise requiring careful, deliberate presentation and repeated on command a number of times. Do not have several such in succession, but alternate them with simple or familiar exercises which can be started without much or any explanation and executed rhythmically from the outset or after being done to command only once or twice.

Compound and even simple movements may often appear similar to the pupils, though essentially different, by being of similar type and by being combined or alternated with the same or similar elements. This is to be carefully avoided in successive exercises. For example, a leg flinging forward should not be placed immediately before or after a leg flinging sideways. Again, if a trunk bending sideways is to be followed by a forward bending, it would not be wise to alternate each with an arm bending or stretching, even though the alternating movement takes place in a different direction in each case. For although the muscular work is different in some essential respects, the similarity of type or style would be most apparent to the pupils.

Vary the starting positions. While the majority of the movements will perhaps be done from the fundamental position, it is often convenient and sometimes necessary in careful progression

to do movements from derived starting positions. Either the arms or the legs or both, or even the trunk, may be in a position different from the fundamental position; but the essential movement begins from and returns to this derived position repeatedly. In any such case avoid using similar starting positions for successive exercises. The principal exception to this is the frequent use of the stride standing position (feet apart) in the beginning of any series of lessons, especially with untrained classes and always with classes of young children.

Avoid giving too numerous and too powerful shoulder blade exercises. At any rate do not have them too near together. While valuable for the increase of tone and control of the muscles of the shoulder girdle and therefore important exercises in posture training, if given to the point of excessive local fatigue the pupils cannot or will not do them correctly. This not only minimizes the effects of such movements (if it does not defeat their special purpose altogether), but also leads to loss of interest. The same applies to carrying the arms high in derived starting positions. As arm movements and positions of all kinds belong in the category of shoulder blade exercises, and as they are particularly suitable for combination or alternation with other movements, it is always a great temptation to use them too much. Indeed, when planning lessons in advanced stages of progression it becomes a most difficult problem how to avoid excessive use of such movements. At any time care should be taken not to have similar types recur too often. Thus use arm bending and stretching in one case, arm raising or flinging in the next, etc., varying the direction of the movement each time.

10. *The apparatus work* should include representatives of the two principal classes: Suspension exercises, and Vaulting or Jumping. Arm support exercises, other than the transitory positions occurring in vaults or as parts of complex suspension exercises on the horizontal bar, are of questionable value and should not be given much prominence, if used at all. Powerful trunk exercises, or combined trunk and suspension exercises at the bar stalls may be included in the apparatus work and given in addition to or in place of one of the others. The number and kind of exercises at each apparatus will vary with the ability of the pupils, the stage in the progression, the amount of time available, and the character of the other work in the lesson. When several exercises are given, they should be as different in type as possible. They should be chosen with a view to supplement each other and the work in the rest of the lesson, as regards muscular localization, etc., so as to contribute to the all-round character of the lesson. Exercises on the horse, buck, parallel bars and low horizontal bar should preferably be of a type which

can be executed quickly (chiefly vaults), so that pupils will not have to spend too much time awaiting their turn. It is also best to start them with a run, except in the case of low horizontal bar exercises. Here the same types may be done with a standing start, partly because it is safer, and partly because practice in this is desirable. On suspension apparatus sufficient rapidity of the work may be attained by letting several pupils do the exercises at the same time whenever possible—as on horizontal ladders, suspended parallel bars, booms and window ladders. On ropes, poles, rope ladders and the high horizontal bar rapid and continuous work is possible only with multiple apparatus. In any case small squads (preferably not more than eight in each), efficient leadership, good organization, management, grading and rational progression are essential for rapidity and continuity of apparatus work.

When there are many squads the work of the leaders will be facilitated by having the exercises at each apparatus systematized and arranged in progressive series on typewritten or printed cards. Or the apparatus work for each squad may be written out and handed to the leaders at or before each lesson. This is probably the most satisfactory method from the standpoint of careful progression and well-balanced lessons; but it requires much time and thought and intelligent coöperation by a well-trained leaders' corps. It would be, perhaps, too difficult to manage when the classes are very large, with many squads, or when the teacher has to handle daily many widely differing classes with insufficient assistance. Under such conditions multiple apparatus, and all the squads doing the same exercise under the teacher's direct supervision, are probably the best solution.

11. *Running, marching and breathing exercises.* Owing to its intermittent character, it is always difficult to get apparatus work done in a satisfactory manner and at the same time with sufficient continuity to preserve, much less increase, the cumulative organic reactions produced by the free-standing exercises. It is therefore particularly desirable to give a run or a lively running game immediately after the apparatus work. When time allows, this is followed by a little marching—balance and toe marching rather than rapid changes of direction. Breathing exercises may be done while marching, or separately.

Summary. The gymnastic lesson should then be planned and arranged in a way to give the pupils the utmost value for their time and effort. The values should consist in vigorous, all-round exercise, leading to immediate and marked organic stimulation with a pleasant sense of fatigue and bodily well-being; adequate training in general subjective motor control with espe-

cial emphasis on good posture; an equalizing influence on growth and a harmonious muscular development. To produce these effects it should be varied and comprehensive in character; it should call for sufficient quantity and gradually increasing intensity of muscular work. The exercises should be selected and arranged with reference to their special and general features in such a way as to fit into and supplement each other, each enhancing the effects of the preceding and preparing the way for the following. Finally the lesson should be taught and managed in a way to accomplish the special purpose of each exercise, and with sufficient speed and continuity to make the general effects of all cumulative. Such a well-balanced and carefully rounded lesson will be most likely to interest the pupils, to enlist their enthusiastic and intelligent coöperation and to elicit the whole-hearted, vigorous response necessary to make it effective.

5. Progression.

From the standpoint of interest as well as all-round effectiveness, rational progression is essential in gymnastic work. It is particularly important when subjective motor training is one of the phases of the work to be emphasized. Lacking the element of progression, no work can be of much educational value. Nor can pupils be expected to remain interested for any length of time in work in which they find nothing further to learn, or in which their growing strength and ability are not constantly given full scope, are not put to new and increasingly difficult tests. Their instinct for progression must be satisfied, to some extent at least, even when the main object of the work is muscular exercise for the sake of organic stimulation. Otherwise they will not long continue to do it with regularity and persevering effort, but will either lapse into habits of bodily inactivity, or will rely solely upon the occasional indulgence in some game or sport which will give them a certain amount of muscular exercise, even though it be inadequate and not always adapted to their special needs.

Progression is one of the important factors in adapting the work to conditions. It is closely bound up with selection, definition, classification, combination and arrangement of exercises; with the planning of lessons; with the style and character of the work; with the methods and technique of teaching it; with maintaining attention and discipline, and thus with control and class management.

Progress may consist in learning to do somewhat familiar exercises better—with more exactness, vigor and completeness—

and therefore more effectively. Or it may consist in learning to do new, more complex, difficult and powerful exercises. Both are elements in progression. The former implies repetition; the latter change, additional features, variety.

Progression as applied to Gymnastic Lessons.

What might be called *progression within the lesson* was indicated in the preceding chapter. It was shown to consist of fairly regular and steady increase of intensity and rate of muscular work in successive exercises, with corresponding progressive increase of organic activity. Then, too, progression is from general to local and again to more general, all-round exercises. There is also progression, though less regular, as regards co-ordination. The more complex and difficult movements, whether free-standing or apparatus work, are generally placed in the latter half of the lesson. Such a progressive arrangement of exercises within the lesson represents the most economical use of the pupil's time and efforts, and is conducive to the best work as well as the most pronounced and lasting effects of the lesson as a whole.

Progression from lesson to lesson consists of an increase in the number, complexity, difficulty, speed, precision and power of the exercises of which successive lessons are composed.

In the free-standing exercises it may mean gradual change in the style and character of the work: from less definite, relatively complex exercises executed rhythmically without holding positions and with little attention to posture or other details, to more definite, relatively simpler movements, done, partly at least, in response to command, and in any case emphasizing details of execution—such as completeness and accuracy, separation of the component elements by holding of positions, maintenance of good posture throughout. Further progression would then mean increased complexity without loss of definiteness, greater speed and more continuity of movement. It would involve, besides, the inclusion of increasingly difficult types, the use of more numerous and difficult elements in the combination and alternation of movements, less repetition on command, more frequent rhythmic repetition, more varied rhythms.

Again, progression from the outset may be from the simplest types of definite exercises done chiefly on command to the more complex and difficult types and combinations, with increasing application of the principle of rhythmic continuity, but always retaining, and if possible increasing, the quality of definiteness.

As regards the apparatus work, progression in successive lessons will mean the inclusion of a greater number and variety of

exercises, as well as more difficult and powerful types, so as to take into full account the pupil's gain in strength and agility.

Many types of apparatus exercises can be done, with more or less modification, on more than one apparatus. In careful progression, account must be taken of the varying degrees of difficulty represented by doing similar types on different apparatus. For example, a squat vault is done more easily on a horse with pommels or on the saddle boom, than on the buck or low horizontal bar. It should therefore be practiced on the former before being tried on the latter. For the same reason, a straddle vault should first be done on the buck, next on the horse with pommels or the saddle boom, then on a horse without pommels and lastly on the low horizontal bar. Again, a back (rear) vault might be tried first on the parallel bars, next on the buck and side horse, then on the long horse and finally on the double boom and low horizontal bar. Similar considerations will determine the choice of type and apparatus in many other vaults as well as in suspension exercises.

Repetition. As was stated in a previous paragraph, progression by no means precludes repetition. When for any reason it is not feasible or desirable to progress by very fine and gradual steps, more or less repetition will be necessary. Then progression consists in doing the same work better. This may be applied to the whole lesson, or to any part of it. Thus it may be wise to repeat the whole lesson from two to five times. Or the free-standing exercises may be repeated several times, while the apparatus work is repeated only once or not at all. Or the reverse may be the best procedure, as, for example, when very little apparatus is available, or with classes of women or young children. Again, certain types of exercises, free-standing as well as apparatus, may have to be repeated many times before the majority of the class can execute them in a satisfactory manner. This is particularly true of types which are not capable of much or any subdivision or simplification, and which cannot be led up to by gradual steps through other types. Such is the case, for example, with charges and some balance movements among free-standing exercises, and with many vaults and suspension exercises.

How many times a lesson should be repeated, as a whole or in part, is a matter depending on the teacher's judgment. It will vary with conditions. Ideally, perhaps, each lesson should be totally different from, as well as represent a distinct advance on, the preceding. But this is rarely feasible in all respects. The steps in the progression of any group of exercises or of the lesson as a whole will be great or small, and repetitions correspondingly more or less numerous, according to (1) the frequency and amount of instruction—whether once or three times

a week or daily, whether fifteen minutes or an hour; (2) the total length of the course of instruction—whether six weeks or six years; (3) the kind of class—age, sex, previous training, mental attitude toward the work, etc.; (4) the availability or lack of apparatus; (5) the abundance or scarcity of types of exercises in any given group or line of progression.

In general, it is wise to have successive lessons as different as possible even though some types of exercises may have to be "carried over" without much or any modification. In many groups of exercises, however, there are a sufficient number of types to make possible the recurrence of a given type or combination, with or without modification, only at intervals of several lessons.

The more frequent the periods of instruction and the greater the total length of the course, the finer and more gradual can the progression be made. There may then be correspondingly less repetition of whole lessons or of individual exercises, unless other conditions are such as to require numerous repetitions. When the frequency and total amount of instruction are limited the steps are longer and repetitions as a rule more numerous. In any case, it will generally be advisable to repeat each lesson *in toto* at least twice. This much will perhaps be necessary in order to have the class notice the change and become aware of the progression. It is also of advantage to review all but the very simplest types and combinations from time to time, either by way of "clinching" them, or to fill in and round out a well-balanced lesson. The occasional use of relatively easy, familiar exercises is often necessary in advanced stages of progression in order to relieve the class from too great strain—muscular and nervous—which would be involved in doing several severe and difficult exercises in succession.

Principles of Progression of Free-Standing Exercises.

General considerations. Before taking up the detailed discussion of principles of progression of free-standing exercises and their application in the various classes of movements, it will perhaps be helpful at this point to summarize and to some extent to restate certain general principles and conceptions closely related to and in many respects serving as a basis for such progression. Most of them have been referred to repeatedly and were among the factors enumerated in the preceding section as elements in the progression of gymnastic lessons.

Types and their relative difficulty. Within the respective groups or classes of exercises there may be many types which represent little or no difference in the matter of difficulty or severity, while between others there may be considerable differ-

ence in these respects. In the former case, the order in which they are used is immaterial, while in the latter case, the progression should, of course, be from the easier to the more difficult. A correct estimate of such relative differences will be greatly helped by an understanding of the anatomical mechanism of the movements; but in any case, the teacher's judgment in this matter will need to be backed up by a practical knowledge of the work and be guided largely by his teaching experience. Often an exercise which appears simple and easy enough, theoretically, or to a well-trained individual, is found in practice to offer considerable difficulty to the majority of pupils, if given too early in the progression. Such is the case, for example, with (slow) deep knee bending with the trunk carried vertical and erect, or with a type of downward bending of trunk in which the "going" movement is combined with double foot placing and preceded by a simple arm movement, while the return (the trunk raising) is combined with the arm movement and followed by the foot placing.

As far as possible the different types should be taken up in such an order that the easier pave the way for and lead up to the more difficult types and combinations. Often in a long series of lessons the most interesting and representative types, whether actually or only relatively difficult, may thus have to be held back until toward the end of the series, even though they might be done acceptably at an earlier period. But it would not be logical nor wise, either from the standpoint of insuring good execution or sustaining interest, to use such types first, and simpler, less interesting types afterward.

When there are "gaps" in any line of progression owing to a scarcity of types suitable for preparatory steps leading up to more difficult and representative exercises, or when the frequency and total number of lessons do not warrant a finely graded progression, recourse must be had to repetition. In this way the most desirable types, even if somewhat advanced for the class, can be presented, and at least a fair degree of correct execution obtained.

Complexity. This term has often been used in the foregoing pages to signify that a movement is made up of several elements, in contradistinction to a simple movement, consisting of only one elementary movement and the return to the starting position. The degree of complexity is determined by the number of elements of which the movement is composed. Several kinds of complexity may be distinguished.

1. A complex movement may consist of two or more elementary movements of *one* part or region of the body (head, trunk or extremities), executed either simultaneously or consecutively. (1) When done simultaneously the term composite movement might perhaps be used. Simultaneous twisting and bending

of the trunk would be an example of such a composite movement. (2) When the different elements are executed consecutively in such a way that the second movement and its return are interposed between the two phases of the first, the whole movement might be called compound if the elements are distinct from each other—each completed before the next begins. When they "overlap," i.e., are partly simultaneous, partly consecutive, and flow into each other smoothly, the whole might be described as a blended, compound movement. Twisting followed by side bending of trunk, and heel raising followed by knee bending may serve as examples. The return movements are always in reverse order.

2. Again, a complex movement may consist of one or more elementary movements of *two or more* parts or regions of the body, either done simultaneously or consecutively. (1) When done simultaneously the whole exercise might be called a combined movement, as, for example, "arm bending with heel raising." (2) When done consecutively, and one element (including the return movement) is interposed between the two phases of the other element, the term compound movement would again be suitable. Alternate foot placing sideways (with hands on neck) followed by trunk twisting is an example of such a compound movement. (3) If, on the other hand, the different elements, with their respective return movements, are executed alternately, the whole cycle might be designated by the term alternating movement. Bend stride standing forward bending of trunk, alternating with arm stretching upward is a typical example. In both the compound and alternating movements the component parts may be combined movements. The whole cycle would then be a combined compound or alternating movement.

Most natural movements, performed in the ordinary activities of daily life, are of the composite, blended, flowing, more or less complex type. So are many gymnastic exercises of the kind which has been termed "indefinite." Definite gymnastic movements, on the other hand, are either simple or composite, or else they are combined, compound or alternating. All the elements are distinct and separated by clearly defined positions.

It will readily be seen, then, that from a gymnastic standpoint progression in regard to complexity should always take into account the relative degree of definiteness of the exercises. It will represent progression, for example, when a complex exercise of the composite, blended and compound, so-called indefinite type—such as an oblique charge or lunge, combined with an arm movement and a trunk twisting and followed by a forward bending of trunk—is redefined so as to make possible resolving it, as nearly as may be, into its component elements. It may then be practiced piecemeal, as it were, in the form of various

definite combined, compound or alternating movements, and finally reconstructed into an exercise as complex as the original, but more definite. The preparatory practice of each part separately might, in a sense, be considered retrogression, being a decrease in complexity; but in reality it is only a step in the progression toward greater definiteness with all that this means in the way of better localization, inhibition, fixation and finer muscular control. The reconstruction or reassembling of the elements into exercises more or less similar to the original type would imply a real increase in complexity of the definite kind. Theoretically, progression would mean in the end a return toward the blended, smoothly flowing type of movement, with greater accuracy, grace and power of execution than previously.

A similar line of progression is followed when the point of departure is different, when the exercises from the outset are of a relatively simple, definite character. Thus, a simple or composite gymnastic movement involving one part of the body is first combined with a similar movement of another part, e.g., arm bending with side lunge; or it is followed by an equally simple movement of the same part, making a compound movement, e.g., arm bending and stretching sideways and upward, or side lunge and alternate knee bending. Then it may be put together with a movement of another part, e.g., hip grasp standing side lunge followed by arm flinging sideways, or by side bending of trunk. Next, one combined movement might be followed by a simple movement—as arm bending with side lunge, then side bending of trunk; or these might be alternated, thus: arm bending with side lunge, side bending and raising of trunk, arm stretching sideways and arm bending, return to fundamental position. Finally a combined compound movement may be made of these elements, as, for example, arm bending with side lunge followed by arm stretching sideways with side bending of trunk. Complexity might be still further increased by adding other elements, such as trunk twisting or arm movements of different kinds, or alternate knee bending, and combining or alternating them in any way compatible with definiteness. Thus an elaborate series or cycle of movements may be constructed. In advanced stages of this kind of progression, as in the other, there would ultimately be an approach to the more composite, blended, complex type of exercises, but with retention of all the vigor, precision, completeness and speed which characterize the definite type of gymnastic movements. However, in ordinary class teaching this point is seldom reached. When it is, the work is really in the nature of dancing. Indeed, there is no sharp line of demarcation between such complex, rhythmic gymnastics and dancing.

PROGRESSION

Combination and alternation. Progression of definite gymnastic exercises as regards complexity—which, coupled with the inherent nature of the different types, is the measure of difficulty—is then a matter of combination and alternation of simple, well-defined elementary movements. The execution of these elementary movements from the various derived starting positions is a closely related factor, and may, indeed, be considered one phase of combination. The judicious choice of starting positions and the proper matching of elements or types in combined, compound and alternating movements are not only essential in rational, consistent progression, but facilitate rhythmic execution of definite exercises, thus making for greater variety, quantity and continuity of the work. These are factors of prime importance in the planning and arrangement of well-balanced, all-round lessons, in the choice of method or procedure in teaching, in making the work effective and interesting.

While combination of all kinds of movements is theoretically possible, in practice only certain combinations are suitable. Only such elements should be chosen and put together as will harmonize and will represent, in their combination, a real increase in effectiveness. The main considerations here are the number, general character and speed of the elements to be combined.

The number will vary with the stage in the progression, and that in turn will depend on the ability of the class. Except in the most advanced work, where very complex combinations—such as charges and lunges combined with dissimilar arm, head and trunk movements—can be used, the number of elements rarely exceeds three—involving the arms, the legs and the trunk respectively. In the great majority of useful combinations there are only two elements.

As regards the general character of the elements to be combined, they should all be simple, definite movements, capable of being executed simultaneously in an equally definite, clear-cut manner. Combination of composite, vague, or ill-defined movements, or of one such, with a simple, definite movement, would make for indefiniteness in the execution of the combination, with corresponding loss of effectiveness.

Finally, only such elements should be combined as can be done with full effectiveness at similar speed. For if two movements whose "natural" speed is different are executed simultaneously—as, for example, an arm movement and a slow trunk bending—the combination will necessarily represent a compromise in respect to speed and power. That will detract from the definiteness and hence from the effectiveness of both elements. Because most trunk movements are relatively slow and require careful, discriminating muscular action to be properly localized, they are not well suited for combination with any other kind of move-

ments, except leg movements of the slow type. In advanced stages of progression, however, relatively quick forward-downward bending may be combined with arm movements and wide foot placing sideways. Trunk twisting may also be done quickly in combination with arm movements, foot placings and charges when the class has reached a sufficiently advanced stage of training.

Whenever combination of two movements is unsuitable, such movements can nearly always be alternated or put together into compound movements. Here there is practically no limitation, except that alternating and compound movements which do not represent any particular value, or which would make successive exercises in a lesson too much alike, should be avoided. The number of parts may be anywhere from two to four. Counting the return phase of each, this will mean double that number of movements (on each side, if unilateral) to complete the cycle. Here, as in combination, movements consisting of only two parts (four count cycles) make up the great majority of useful exercises. Any one or all of the parts may be combined movements. Thus the number of elements—the complexity—may be made as great or as small as the teacher desires and the ability of the class justifies.

Speed. As has already been stated, most movements are done in the most effective manner at a certain speed—their "natural" speed. Thus trunk bendings are best done slowly, arm bendings and stretchings quickly. On the other hand, many movements may be done at different speeds and their character or special effectiveness made to vary accordingly. Thus, for example, in slow arm bendings and stretchings, there is more resistance on the part of the antagonistic muscles. This makes them more effective as shoulder blade exercises. Similarly, heel raising and knee bending, when done slowly, becomes more of a balance movement than otherwise, and the muscular work is more fatiguing. Trunk twisting, after some practice, may be done equally effectively slowly or quickly. In general, progression in this respect is away from the "natural" speed of the movements, providing the muscular action is thus made more powerful and difficult. Increased speed would then generally mean more sudden and vigorous contraction of all muscles concerned, and especially of motor muscles; while retardation would mean bringing into action a greater number of antagonistic, steadying and fixator muscles, or more vigorous contraction of those which are used more or less even when the movement is done with greater speed.

Rhythm. Uniform, moderately fast rhythm is easiest, especially when associated with very brief pauses between the movements—that is, when positions are not retained an appreciable

length of time. The speed of the movements and the effort required are then correspondingly moderate; the exercises are more or less indefinite. When for any reason this type of work is desired, progression would be toward faster rhythm, which would then be equivalent to greater speed of movement. But if it is desired to make the work more definite in character, progression would at first be toward slower rhythm by making the pauses during which positions are held longer. Such slowing of the rhythm would not preclude, but rather favor, increasing the speed of the movements.

In rhythmic work of the definite type, progression is generally from the slower toward the faster rhythms, partly by shortening the pauses somewhat, but even more by increasing the speed of the movements. Progression is also from even, uniform rhythm to the various kinds of broken, undulating rhythms. In these it is also generally a variation of the speed of the movements rather than of the length of the pause, although the latter may occur to a limited extent. Alternation of quick and slow movements with lengthening of the pause after the former and shortening it after the latter gives a certain accentuation to a compound movement which simulates broken rhythm. But in reality such rhythm is often very nearly, if not quite, even.

Derived starting positions. Most simple and combined movements may be made progressively more difficult or powerful by being started from positions in which the arms, the legs or the trunk—one or all—are in a different relation to each other from that obtaining in the fundamental position. The use of these derived starting positions adds to the total quantity, the complexity and difficulty of the muscular work of the exercise, not only by the efforts necessary to sustain them, but by the possibilities they offer in the way of increasing the weight leverage, of varying the base, and thus of modifying conditions of equilibrium and weight distribution. The changed relation of the parts also means different conditions of fixation for muscular work, compels dissociation of familiar or habitual group action of muscles and induces new, more varied and difficult associations. The starting position may make more difficult or facilitate localization of movement and even of muscular contraction, may increase or diminish range of movement, and thus be a determining factor in the general or specific effectiveness of the exercise.

The movement by which any given (named) starting position is reached should not be considered a part of the named movement which begins from and returns to this starting position repeatedly. The former occurs only once and is taken in response to a descriptive command in which the imperative verb serves as the final command. The return to the fundamental

position occurs only after the real movement has been repeated the desired number of times. When the movements by which derived starting positions are reached are practiced repeatedly, either as simple or combined movements, or as parts of compound movements, they are named as movements and not as positions.

For the convenience of readers who are not familiar with the terminology used in the following pages, a list of the various derived positions and the movements by which they are reached, with brief explanations, follows.*

Starting positions derived from the fundamental position.

1. By change in the position of the arms.

Hip grasp (or wing) standing position—hands placed on hips.
Movement: Placing hands on hips.

Bend standing position—elbows completely flexed and close to the waist, fingers flexed as much as possible and close to the outer part of the shoulders.
Movement: arm bending.

Neck grasp (or rest) standing position—hands placed behind neck (or head).
Movement: Placing hands on neck (or head).

Cross (a) standing position—arms raised sideways, elbows flexed and well back, hands and elbows at shoulder level, palms down.
Movement: Forward bending of arms.

Cross (b)—as cross (a), but with elbows flexed only 90°, palms facing each other.
Movement: ½ forward bending of arms.

Cross (c)—arms raised sideways to shoulder level, elbows extended, palms down.
Movements: Arm raising or flinging, or stretching (from bend st. pos.) sideways, or arm parting (flinging sideways) from reach st. pos.

Cross (d)—as cross (c), but with palms up.
Movements: Arm raising, flinging or stretching sideways, with palms up.

Cross (e)—as cross (d), but with elbows flexed 90°.
Movement: ½ sideways bending of arms.

Reach st. pos.—arms raised horizontally forward, shoulder distance apart, palms facing each other.
Movements: Arm raising, flinging or stretching forward.

Diagonal or oblique stretch st. position—arms raised sideways-upward to a position of 45° from the vertical, palms up.
Movements: Arm flinging or stretching diagonally (sideways-) upwards.

Stretch st. pos.—arms vertically overhead, elbows straight, palms facing each other.
Movements: Arm raising or flinging sideways-upward or forward-upward; arm stretching upward; placing hands overhead.

*With a few exceptions, the terms are those used by C. J. Enebuske in his "Progressive Gymnastic Day's Orders," and translated by him from the Swedish.

2. By change in the position of the legs.

Stride standing position—feet placed directly sideways, two foot-lengths apart, body weight equally on both feet.
Movement: Foot placing sideways, alternate foot placing sideways.

Walk (a) st. pos.—one foot placed obliquely forward-outward two foot-lengths. Weight equally on both feet.
Movement: Alternate foot placing obliquely outward.

Walk (b) st. pos.—one foot placed directly forward, weight equally on both feet.
Movement: Alternate foot placing forward.

Walk (c) st. pos.—as walk (b), but with toes pointing straight ahead.
Movement: Alternate foot placing forward (from the close st. pos.).

Close st. pos.—heels and toes together.
Movement: Closing of feet.

Toe st. pos.—heels raised.
Movement: Heel raising.

Knee-bend st. pos.—trunk erect, heels on floor, knees bent and well apart.
Movement: Knee bending.

Toe-knee-bend st. pos.—as preceding, but with heels raised, knees flexed 90°.
Movement: Knee bending with heel raising (combined), or heel raising and knee bending (compound).

Toe-deep-knee-bend st. pos.—as preceding, but knees flexed as much as possible.
Movement: Deep knee bending (with simultaneous heel raising), or heel raising and deep knee bending.

Side lunge position—foot placed directly sideways about three foot-lengths, knee well out and flexed upwards of 90°, trunk erect (vertical).
Movement: Side lunge.

Oblique charge position or charge (a)—foot placed obliquely forward-outward three foot-lengths, knee flexed about 90°, trunk in line with the straight rear leg, sole of rear foot firmly pressing on the floor, shoulders inclined, but facing forward.
Movement: Oblique charge.

Forward charge position or charge (b)—three foot-lengths straight ahead, toe of advanced foot pointing forward, rear foot firm on the floor, at right angles to advanced foot, trunk in line with rear leg, shoulders level and square to the front.
Movement: Forward charge.

Toe-support charge position—like preceding, but with only the toe of rear foot touching the floor.
Movement: No name.

½ standing position—on one foot, with the free leg raised forward or sideways.
Movement: Leg raising forward or sideways.

Kneeling position—knees flexed 90°, ankles extended.
Movement: Kneeling.

½ kneeling position—on one knee, the other foot placed directly forward far enough to flex the knee 90°.
Movement: Kneeling on one knee.

Stooping position—knees bent as much as possible, heels off, trunk inclined forward, back straight, hands touching floor.
Movement: Stooping.

½ hook standing position—one knee raised forward, about 90° flexion at hip and knee.
Movement: Knee upward bending.

3. By change in the position of the trunk.

Arch standing position—chest forcibly expanded, head moved as far backward as possible without tilting (chin in).
Movement: Backward arching or bending of trunk.

Prone standing position—trunk inclined forward about 45° from hips, back straight.
Movement: Forward bending of trunk. (Movement beyond 45° would be called forward-downward bending of trunk.)

Twist standing position—trunk turned about 45° to one side, without moving hips. Head is not moved independently.
Movement: Trunk twisting.

Prone falling position (front leaning rest)—body straight, face downward, supported on hands and toes.
Movement: No name.

Side falling position (side leaning rest)—body straight, supported on hand and foot of one side.
Movement: No name.

Derived starting positions in which more than one part of the body varies from the fundamental position are named by putting the respective designations together, with or without hyphen, e.g., bend stride standing position; cross (a) toe st. position; stretch toe-knee bend st. position; neck grasp walk (a) st. position; cross (d) close twist st. position; cross (e) stride prone st. position; hip grasp oblique charge position. When a movement is to be done from a derived starting position the logical way would be to put a colon after the word "position," thus: Bend standing position: arm stretching sideways. But this may be contracted by omitting the word "position" and the colon. The example given would then be: Bend standing arm stretching sideways.

When naming combined movements the word "with" connects the two terms, e.g., arm bending with heel raising; cross (a) stride standing arm flinging sideways with knee bending. In compound movements the word "and" is used, preceded by a comma, e.g., hip grasp standing alternate foot placing sideways, and knee bending.

In combined compound movements the words "and" and "with" may be used in two ways, as shown in the following example: Arm bending and stretching upward with alternate foot plac-

ing forward and heel raising; or, arm bending with alternate foot placing forward, and arm stretching upward with heel raising. If it is desired to be very explicit, the phrase "followed by" or the word "then" may be substituted for the word "and."

6. Application of Principles of Progression in the Various Classes and Types of Free-Standing Exercises.

The general principles discussed in the preceding chapter are more or less applicable to all classes and types of movements. The extent and mode of their application will vary somewhat with the particular groups or types of exercises and will be determined by various factors, such as the character and purpose of any given movement, the emphasis placed on any one phase of the work, the suitability or practicability of any possible modification of an exercise, etc.

The manner of application of some of the main principles which are involved in determining or changing the character and mode of execution of an exercise—from the less to the more definite style, from doing each movement on command to rhythmic repetition and *vice versa*, variations of speed and rhythm—has already been indicated and will not be discussed further. It is largely a matter of technique of teaching on one hand, and of the teacher's ideals, standards of quality and judgment of conditions on the other. A thorough understanding and working knowledge of such application can really only be gained through experience. The present chapter will be devoted mainly to the illustration of the use of derived starting positions, of combination and alternation of movements for the purpose of progressively increasing the complexity, difficulty or severity of the principal types which make up the different classes of exercises.

Leg (and Arm) Movements.

The *principles* used in the progression of this class of exercises are:

1. Variation of base by changing the starting position of the legs. The increase in difficulty of keeping the balance, which is one of the features resulting from such variation of starting positions, should not at any time be carried so far as to interfere with brisk and vigorous execution. Types and combinations which represent considerable difficulty in this respect should first be practiced as balance exercises.

2. Executing leg movements while holding the arms in increasingly difficult starting positions—chiefly hip grasp (wing), bend, and neck grasp (rest) positions.

3. Combining leg movements with arm movements.
4. Holding difficult or tiring leg positions while doing arm or head movements. Exercises of this type should be used only sparingly, if at all, as leg movements. They are more suitable for balance exercises. This line of progression will be illustrated under balance exercises.
5. Making compound movements by having one leg movement follow another—as heel raising and knee bending; alternate foot placing and heel raising, or knee bending, or both.
6. Making combined compound movements with both arms and legs, thus increasing the number of elements.
7. Increasing the range of movement (in deep knee bending).

Types.

Alternate foot placings—sideways, forward, obliquely forward-outward, backward, obliquely backward-outward.
Alternate toe touching forward or sideways with bending of knee of stationary leg.
Alternate toe raising.
Heel raising; alternate heel raising. Alternate heel-and-toe raising.
Knee bending; deep knee bending; alternate knee bending.
Side lunge.
Stooping.

Progression.

Alternate foot placings:

Hip grasp standing, Bend standing, Neck grasp standing } alternate foot placing { sideways, forward, forward-outward, backward, backward-outward.

Alternate foot placings in the different directions } combined with { placing of hands on hips; on neck; arm bending; forward bending of arms; arm flinging sideways, forward, sideways-upward, forward-upward; placing hands on neck; arm circumduction (=forward-upward, sideways-downward); ½ sideways bending of arms.

Alternate toe touching with bending of opposite knee:
Progression similar to that of alternate foot placing.

Heel raising:

Hip grasp, Bend, Neck grasp { stride standing, standing, walk (a) standing, close standing, walk (b) and (c) standing } heel raising.

Heel raising with arm movements:

Placing hands on hips
Arm bending
Forward bending of arms
Arm raising or flinging sideways
Arm raising or flinging forward
Placing hands on neck
Bend st. arm stretching downward
Cross (a) st. arm flinging sideways
Bend st. arm stretching sideways
Reach st. arm flinging sideways
Cross (c) st. arm rotation
Cross (b) st. arm rotation
Bend st. arm stretching upward
Cross (d) st. arm raising, or flinging upward
Reach st. arm raising or flinging upward
Cross (e) st. arm stretching upward

} with heel raising.

Simple arm movements with alternate foot placings, and heel raising:

Placing hands on hips
Arm bending
Forward bending of arms
Placing hands on neck, etc.

} with alternate foot placing sideways, forward, obliquely outward, etc., } and heel raising.

Compound (2 count) arm movements with alternate foot placings and heel raising:

Arm bending and stretching sideways
Forward bending and side flinging of arms
Arm flinging forward and sideways
Arm bending and stretching forward
Arm flinging sideways and arm rotation
Arm bending and stretching upward
Arm flinging sideways and upward
Arm circumduction (4 counts: forward and upward, sideways and downward)
½ sideways bending of arms and arm stretching sideways, or upward
Arm flinging forward-upward and arm parting

} with alternate foot placings } and heel raising.

Closing and opening of feet may be substituted for alternate foot placings in most of the above combined and compound movements.

Alternate heel raising may be done as a 1 or 2 count movement (on each side) from the stride standing position with the arms in hip grasp or neck grasp positions.

Alternate toe raising—from the hip or neck grasp st. pos.

Alternate heel-and-toe raising—from the hip or neck grasp standing, the bend or cross (c) standing positions.

Knee bendings:

Hip grasp
Neck grasp

} standing
stride standing } knee bending.

Knee bendings with arm-movements:

Stride standing Toe standing	Arm raising or flinging sideways Arm bending Forward bending of arms ½ sideways bending of arms Arm flinging sideways-upward Arm circumduction, 2 counts	with knee bending.
Bend stride st. arm stretching sideways Cross (a) stride st arm flinging sideways Reach stride st arm parting (or flinging) sideways Bend stride st arm stretching forward Bend stride st arm stretching upward Cross (d) stride st arm raising Reach stride st arm raising or flinging upward Cross (e) stride st arm stretching sideways or upward Cross (c) stride st arm rotation Cross (b) stride st arm rotation		with knee bending

Similar combination of arm movements with knee bending and deep knee bending from the toe standing position; also knee bending with simultaneous heel raising, starting from the fundamental standing position

Hip grasp Neck grasp	standing	knee bending with simultaneous heel raising (designated more briefly by 'heels off')
Standing	Arm raising (or flinging) sideways Arm bending Forward bending of arms ½ sideways bending of arms Arm flinging sideways upward Arm circumduction, 2 counts	with knee bending, heels off

Close standing arm flinging forward with knee bending (knees together), heels off

Hip grasp Bend Neck grasp	stride standing standing walk (a) st walk (b) st	heel raising and knee bending
Hip grasp Neck grasp	standing heel raising and deep knee bending	

Simple arm movements with alternate foot placings, and knee bending

Placing hands on hips Arm bending Forward bending of arms Placing hands on neck Arm flinging sideways ½ sideways bending of arms Arm flinging forward Arm flinging sideways-upward Arm flinging forward-upward Arm circumduction, 2 counts	with alternate foot placing sideways, forward obliquely forw -outw backward obliquely backw -outw	and knee bending (without or with simultaneous heel rais'g)

The above arm movements may also be done with heel raising (as a separate movement), followed by knee bending. The heel raising here takes the place of the foot placings. Example: Placing hands on neck with heel raising, and knee bending.

Compound (2 count) arm movement with alternate foot placings, or heel raising, followed by knee bending:

Arm bending and stretching sideways, forward or upward
Forward bending and side-flinging of arms
Arm flinging sideways and arm rotation
Arm flinging forward and sideways (arm parting)
½ sideways bending of arms and arm stretching sideways or upward
Arm flinging sideways and upward (separate movements)
Arm circumduction (4 movements)
Arm flinging forward-upward or sideways-upward and arm parting

} with heel raising or with alternate foot placings in the different directions } and knee bending.

Hip grasp standing
Neck grasp standing

} alternate foot placings, heel raising and knee bending.

The last are 6 count compound movements on each side, the heel raising being a separate movement. The arms remain in the derived positions throughout the repetitions.

Arm bending and stretching sideways, forward or upward
Forward bending and side-flinging of arms
And all the other 2 count (compound) arm movements (see above)

} with alternate foot placings, } heel raising and knee bending.

These are also 6 count cycles (on each side), the heel raising being a separate movement. The arms are held during the knee bending in the position reached on the second count (which accompanies the heel raising).

Finally, combined 6 count movements may be composed of three arm and three leg elements, as, for example:

Arm bending and stretching forward, or upward, then arm parting, combined with alternate foot placings, heel raising and knee bending; or

Arm bending and stretching sideways
Forward bending and side-flinging of arms
Arm flinging forward and sideways

} then arm raising, } with alternate foot placings, heel raising (separate) and knee bending.

Such complex movements represent a good deal of "head" work and would hardly be suited for ordinary class work. They may, however, be used occasionally in well-trained classes by way of stimulating interest.

Alternate knee bending.

From (wide) stride standing position with the arms in hip grasp or neck grasp position.
May be done as a simple 2 count movement on each side, or as a continuous movement from one side to the other (1 count each way), both knees being straight at the moment of passing the central position, but without stopping there.
May also be started from the side lunge position. (See below.)

Side lunge.

Hip grasp / Neck grasp } standing side lunge.

Combined with simple arm movements:

Placing hands on hips
Arm bending
Forward bending of arms
Placing hands on neck, etc., etc. } with side lunge.

Simple arm movements with (alternate) side lunge, followed by alternate knee bending once to each side.
The arms remain in the position reached on the first count during the two counts of the alternate knee bending and are brought to the fundamental position on the fourth count, as the foot is brought back from the side lunge position.

It is possible to combine side lunge, followed by alternate knee bending, with 2 count arm movements, but the latter should preferably be asymmetrical, i.e., occur in different directions. For example: Left side lunge with right arm flinging sideways, left sideways-upward, then alternate knee bending with change of arm positions (2 counts), return to fundamental position (4 count movement on each side).

Another example often used in bar bell drills:

Side lunge left with forward bending of left arm, side flinging of right then alternate knee bending with reversing of arm positions (2 counts). Return to fundamental position. Same on other side.

Stooping.

Hip grasp st.
Bend standing
Cross (a) st.
Cross (c) st.
Neck grasp st. } Stooping (and return to starting position).

Bend st. stooping, alternating with arm stretching sidew. or upw.
Cross (a) st. stooping, alternating with arm flinging sidew.
Reach st. stooping, alternating with arm flinging sidew.
Cross (d) st. stooping, alternating with arm raising.

The alternating arm movement in the above may also be combined with heel raising.

Arching Movements.

Principles:

Doing the movement from increasingly difficult leg positions, making the base narrower or more elongated.
Doing the movement with the arms held in higher and more difficult positions.
Doing the movement from the twist standing position.
Combining arching movements with arm movements.
Combining arching movements with trunk twisting.
Doing an arching movement as a part of a rhythmic compound or alternating movement, the other element being an arm or leg movement, or even a compensatory movement.
Doing an arm movement while holding the arch standing position.
Taking the grasp arch standing position at the bar stalls.
Doing heel raising, alternate knee upward bending or leg raising while holding the grasp arch standing position at the bar stalls.

While the bar stall exercises are the most powerful types of arching movements, the excessive lumbar hyperextension, which is apt to be such a marked feature in these exercises, make them of questionable value in ordinary class work. They may, however, be used with advantage as special corrective exercises, individually supervised.

Types.

Some of the derived arm positions may be used in the beginning, especially with an untrained class, as preliminary arching exercises. These positions are then held for a relatively long time and only repeated (on command) once or twice.
Backward bending of head.
Backward arching or (bending) of trunk.
Grasp arch standing position.

Progression.

Bend, cross (a), neck grasp, cross (e) and stretch standing positions are the principal derived arm positions that may be used as preliminary arching exercises.

Standing
Hip grasp st.
Bend st. — backward bending (or moving) of head.
Cross (a) st.
Neck grasp st.

Simple arm movements combined with backward bending of head:

Arm rotation (slow)
Arm raising sideways (slow)
Arm raising forward-sideways (slow)
Arm raising sideways, palms up (slow)
Arm raising forward-sideways, palms up, and sinking sideways-downward (slow)

with backward bending of head.

Reach st. arm parting (slow)
Bend st. arm stretching sideways (slow)
Cross (d) st. arm raising (slow)
Arm raising sideways-upward (slow)
Arm circumduction (2 counts, slow)
Arm circumduction (3 counts, quick)

(Some of these may also be done quickly and repeated rhythmically. They are then more like shoulder blade exercises than arching movements.)

Hip grasp Bend Cross (a) Cross (c) Cross (d) Cross (e) Neck grasp Oblique stretch Stretch	stride standing standing close standing walk (b) standing walk (a) twist standing stride twist standing twist standing close twist standing	backward arching of trunk.

Simple quick arm movements combined with alternate foot placings and followed by backward arching of trunk:

Placing hands on hips Arm bending Forward bending of arms Placing hands on neck Arm flinging sideways ½ sideways bending of arms Arm flinging forward-upward Arm flinging sideways-upward Arm circumduction, 2 counts	with alternate foot placing sideways or forward,	and backward arching of trunk.

Simple slow arm movements from derived arm and leg positions combined with backward arching of trunk:

Bend Reach Cross (c) Cross (b) Cross (e) Cross (d) Stretch	stride st. standing close st. walk (b) st. walk (a) twist st. stride twist st. twist st. close twist st.	slow arm stretch. sideways or upward slow arm parting or arm raising slow arm rotation slow arm rotation slow arm stretch. sideways or upward slow arm raising slow arm parting	with backward arching of trunk.

Simple arm movements alternating with the arching movements, done from derived arm and leg position as well as the twist st. pos.:

Bend Cross (a) Cross (e) Neck grasp Bend Cross (d) Neck grasp Cross (e) Stretch	stride st. standing close st. walk (b) st. walk (a) twist st. stride twist st. close twist st.	backward arching of trunk, alternating with	arm stretching sideways. arm flinging sideways. arm stretching sideways, palms up or down. arm stretching sideways, palms up or down. arm stretching obliquely upward. arm raising. arm stretching upward. arm bending and stretching upward or arm parting.

Compound (2 count) arm movements the first part of which is quick and combined with alternate foot placing sidew. or forw., the second part slow and combined with backward arching of trunk:

Arm bending and stretching sideways
Arm flinging forward and arm parting
½ sideways bending of arms and arm stretching sideways
Arm bending and stretching upward
Arm flinging sideways and arm raising
Arm flinging forward and arm raising
½ sideways bending of arms and arm stretching upward
Arm flinging forward-upward and arm parting

} with alternate foot placing sideways or forward } and backward arching of trunk.

Arm movements with trunk twisting and simultaneous backw. arching of trunk:

Standing
Stride st.
Walk (a) st.

} Arm circumduction with trunk twisting and simultaneous arching of trunk.

Bend st.
Cross (e) st.

} slow arm stretching sideways or upward } with trunk twisting and arching of trunk.

Simple quick arm movements combined with alternate foot placing obliquely forw.-outw., and followed by trunk twisting to same side, then by backw. arching of trunk (6 counts):

(Placing hands on hips)
Arm bending
Forward bending of arms
Placing hands on neck
Arm flinging sideways
½ sideways bending of arms
Arm flinging forward-upward
Arm flinging sideways-upward
Arm circumduction

with alternate foot placing obliquely forward-outward, then trunk twisting, } and backward arching of trunk

Simple, quick arm movements combined with alternate foot placing obliquely forward-outward and simultaneous trunk twisting to same side, followed by backw. arching of trunk. These are 4 count cycles, the increased difficulty consisting in the triple combination of arm and leg movement with trunk twisting. The movements are the same as those enumerated in the preceding column.

Compound (2 count) quick arm movements, the first part of which is combined with alternate foot placing sidew. or obliquely forw.-outw., the second with trunk twisting. The position thus reached is held during the slow arching movement. These are 6 count cycles:

Arm bending and stretching sideways
Forward bending and side-flinging of arms
½ sideways bending of arms and arms stretching sideways
Arm bending and stretching upward
½ sideways bending of arms and arm stretching upward

with alternate foot placing sideways or obliquely forward-outward and trunk twisting, } followed by backward arching of trunk.

Compound (2 count) arm movements, the first part of which is quick and combined with alternate foot placing sidew., or obliquely outw., the second part slow and combined with trunk twisting and simultaneous backw. arching of trunk. These are 4 count cycles, extremely difficult to do well.

Arm bending with alternate foot placing sideways or outward, arm stretching sideways
½ sideways bending of arms with alternate foot placing, arm stretching sideways
Arm bending with alternate foot placing, arm stretching upward
½ sideways bending of arms with alternate foot placing, arm stretching upward
Arm flinging forward-upward with alternate foot placing, arm parting

with twisting and backward arching of trunk.

Compensatory Exercises.

Types.

Forward bending of trunk.
Forward-downward bending of trunk, with straight upper back and arms held in the various derived starting positions.
Forward-downward bending of trunk, with straight upper back, combined with arm movements forward, making efforts to touch the floor with the hands.

These are all general back exercises and their progression will be illustrated under that head.

Stooping. Progression of this type has been given under leg exercises.
Knee upward bending.
Leg flinging forward-upward.

The progression of these types will be illustrated under abdominal exercises, to which group they belong.

Lateral Trunk Exercises.

Principles.

Increasing weight leverage by carrying the arms higher.
Varying the base:
(1) Making the starting position more secure in order to facilitate greater range or more perfect localization of the movement.
(2) Reducing the base, thereby introducing the balance element and thus increasing the difficulty of the movement.
Alternating and combining with arm or leg movements, or both.
Doing arm movements from twist standing position.
Doing side bending of trunk from the twist standing position.
Doing leg or arm movements, or both, from side falling position.
Combining arm movements with leg flinging sideways.
[In exercises at the bar stalls the arms or legs are fixed, thereby giving opportunity for greater range and weight leverage and better localization.]

Types.

Trunk twisting. Side bending of trunk. Leg raising or flinging sideways. Side falling position. Charges.

[Bar stall exercises: Foot grasp standing side bending of trunk. Foot grasp sitting backward leaning and twisting of trunk. Side lying side bending of trunk. Grasp side arch standing leg flinging sideways. Side holding.]

Progression.

Trunk twisting.

Bend, Cross (a), Neck grasp, Cross (c), Cross (e), (Stretch) — stride st., walk (a) st., walk (b) st., standing close st. — trunk twisting.

Alternating with arm movements:

Bend, Cross (a), Neck grasp, Bend — stride st., standing close st. — trunk twisting alternating with — arm stretching sideways; arm flinging sideways; arm stretching sideways or upward; arm stretching upward.

All the way from one side to the other in one continuous quick movement:

Bend, Cross (a), Neck grasp, Cross (c) — stride st. alternate trunk twisting from one side to the other.

All the way from one side to the other, alternating with arm movements:

Bend, Cross (a), Neck grasp, Cross (d) — stride st. trunk twisting all the way, alternating with — arm stretching sideways or upward; arm flinging sideways; arm stretching sideways or upward; arm raising.

Simple arm movements combined with leg movements, and followed by trunk twisting:

Arm bending, Forward bending of arms, Placing hands on neck, Arm flinging sideways, Bend st. arm stretching sideways — with alternate foot placing sideways, obliquely outward or forward, or with closing of feet, or with oblique charge, — and trunk twisting.

Arm movements from twist standing position:

Bend, Cross (a), Cross (c), Cross (e), Cross (d), Stretch — stride, walk (a), walk (b), close, twist st. — twist standing — arm stretching sideways or upward; arm flinging sideways; arm rotation; arm rotation or stretch. sidew. or upw.; arm raising; arm parting.

Simple arm movements combined with alternate foot placings or oblique charge and simultaneous trunk twisting:

Placing hands on hips Arm bending Forward bending of arms Placing hands on neck Arm flinging sideways Arm flinging forward Bend st. arm stretching sideways ½ sideways bending of arms Arm flinging sideways-upward Arm circumduction Bend st. arm stretching upward	with alternate foot placing sideways, obliquely outward or forward, or with oblique charge	and simultaneous trunk twisting.

Compound arm movements, the first part of which is combined with an alternate foot placing, or oblique charge, and simultaneous trunk twisting, the second is done while retaining the twist standing position:

Arm bending		arm stretching sideways.
Forward b'd'g of arms	with alternate	arm flinging sideways.
Arm flinging forward	foot placing	arm parting.
Placing hands on neck	sideways or ob-	arm stretching sideways.
½ sidew. b'd'g of arms	liquely outw.	arm stretch. sidew. or upw.
Arm bending	or with oblique	arm stretching upward.
Arm flinging sideways, palms up,	charge and with simulta-	arm raising.
Arm flinging sideways-upward	neous trunk twisting; followed by	arm parting.
Arm flinging forward-upward		arm parting.

The above compound arm movements, the first part of which is combined with an alternate foot placing, or oblique charge, the second with trunk twisting. Examples:

Forw. b'd'g of arms with alt. foot placing obliquely outw., then arm flinging with trunk twisting.

Arm b'd'g with oblique charge, then arm stretching upw. with trunk twisting.

Side bending of trunk:

Hip grasp Bend Cross (a) Neck grasp Cross (c) Cross (e) Diagonal stretch Stretch	stride standing walk (b) standing close standing walk (c) st. walk (a) twist st. stride twist st.	side bending of trunk.

Alternating with arm movements:

Bend			arm stretching sideways.
Cross (a)	stride st.	side bending of trunk, alternating with	arm flinging sideways.
Neck grasp	standing		arm stretching sideways.
Cross (e)	close st.		arm stretching sideways.
Cross (d)	walk (b) st.		arm raising or flinging upward.
Bend			arm stretching upward.
Neck grasp			arm stretching upward.

All the way from one side to the other without stopping in the upright position:

Hip grasp
Cross (c)
Neck grasp
Stretch
} stride standing alternate side bending from one side to the other in one continuous movement

Simple arm movements combined with leg movements, and followed by side b'd'g of trunk:

Placing hands on hips
Arm bending
Forward bending of arm
Placing hands on neck
Arm flinging sideways
Bend st. arm stretching sideways
½ sideways bending of arms
Arm flinging diagonally upward
Arm flinging sideways-upward
Arm circumduction
Bend st. arm stretching upward
} with alternate foot placings sideways or forward; or with closing of feet, or with side lunge, } and side bending of trunk.

The above simple arm movements with alternate foot placi (forward-) outward, or sideways, followed by trunk twisting, then side bending of trunk. 6 count cycles.

The same with oblique charge instead of foot placing. The trunk twisting is to the opposite side of the charge.

The above arm movements with oblique foot placing, or oblique charge, and simultaneous trunk twisting, followed by side bending of trunk. 4 count cycles.

Compound arm movements, the first part of which is combined with an oblique foot placing or charge, the second with trunk twisting, followed by side bending of trunk. Examples:

Arm bending and stretching sideways or upward
Forward bending and side flinging of arms
} with alternate foot placing outward or with oblique charge and trunk twisting } then side bending of trunk 6 count cycles.

Wide stride standing side bending with simultaneous knee b'd'g. The same with simultaneous arm movements:

Hip grasp
Bend
Cross (a)
Neck grasp
Cross (c)
Stretch
stride st. side-and-knee bending.

Bend stride st. arm stretch sidew. with side-and-knee bending.
Neck grasp stride st. arm stretch sidew. with side-and-knee bending.
Arm flinging sidew. with alt. foot plac. sidew., then side-and-knee bending.

Arm bending
Placing hands on neck
} with alternate foot placing sideways, then side-and-knee bending with arm stretching sideways.

Side bending of trunk, standing on one foot. See balance exercises.
Leg flinging sideways.

These are quick movements repeated rhythmically several times on each side (then designated L. and R.), or alternately. The position is not held at the end of the up-stroke, the recoil from which marks the beginning of the return movement. At the end of the down-stroke, however, the position is held a brief moment, with the weight equally on both feet.

Hip grasp / Neck grasp } standing { leg flinging sideways, one side at a time / alternate leg flinging sideways.

Combined with arm movements:

½ hip grasp st. leg flinging L. and R. with opposite arm flinging { sideways. / sideways-upward.

Standing / Hip grasp st. } alternate leg flinging sideways with opposite arm flinging sideways, or sideways-upward

Bend st. } leg flinging L. and R. / alternate leg flinging sideways } with arm stretching { sideways. / obliquely upward. / upward. / upward on same, sideways on opposite side.

Hip grasp standing jumping on toes with alternate leg flinging sidew. Side falling position (side leaning rest).

Reached by (1) stooping, (2) taking the prone falling position (front leaning rest), (3) turning 90°. Taking the position and returning to the fundamental standing position thus makes a compound six count movement when repeated rhythmically. The side falling and the fundamental positions are held longer than the stooping and prone falling positions. The rhythm is therefore quite uneven. The free arm may be held in different positions, thus:

½ hip grasp
½ bend
½ neck grasp
½ stretch
½ cross (c) } side falling position and return.

Arm movements or leg raising, or both simultaneously, may be done from the side falling position. Such movements, however, are quite difficult balance exercises, and might be classified as such.

½ hip grasp		arm raising sidew. or sidew.-upw.
½ bend	side falling leg raising, or	arm stretching sidew. or upw.
½ neck grasp		arm stretching sidew. or upw.
½ stretch	side falling leg raising with	
½ cross (c)		arm raising.

Charges will be described later, under that head.

[Types of lateral trunk exercises done at the bar stalls:

Grasp side falling position. Leg raising from this position.

Hip grasp / Neck grasp / Stretch { foot grasp ½ standing / foot grasp side lying } side bending of trunk.

Grasp side arch ½ standing (one leg raised) { heel raising. / 2 leg flinging sideways.

Side holding (retaining the position reached by leg flinging sidew.)]

Back Exercises.

A. Shoulder blade movements.

Principles.

Increasing the range of the movement. Increasing the speed.
Increasing difficulty of coördination, in "finding" and retaining the final position; by doing movement from difficult starting position.
Increasing antagonistic muscular resistance by making the movement slower.
Increasing weight leverage and difficulty of coördination by doing movement from starting positions in which the trunk is inclined forward, e.g., prone st. pos., charge pos.
(Increasing resistance by mechanical contrivances, e.g., chest weights.)

Types.

Arm bending; forw. b'd'g of arms; arm flinging sidew. with palms down or up; placing hands on neck; arm rotation from standing, cross (c) and cross (e) pos.; arm flinging forw.; ½ sidew. b'd'g of arms; arm flinging forw.-upw., and sidew.-upw.; arm circumduction; arm b'd'g and stretching sidew., forw., upw.; arm flinging forw.-sidew. and downw.; reach st. arm parting (or flinging sidew.), palms down or up; reach st. arm flinging upw.; swimming movement; stretch st. arm parting; asymmetrical arm movements, such as arm stretching in diverse directions, starting from the bend st. pos.; lowering one arm and raising the other, etc.

Progression.

As indicated under *principles*. The various types embody the application of these principles in varying degrees.
Many of these types are used chiefly in combination or alternation with movements of other groups. In the beginning of any series of lessons, however, they may with advantage be practiced separately, at first on command and later as continuous, rhythmic movements.

B. General back movements.

Principles.

Varying the starting position of the legs so as to increase or diminish stability, facilitate localization of movement, or increase resistance and difficulty of coördination.
Varying the starting position of the arms, thereby increasing weight leverage and difficulty of coördination.
Increasing the range of the movement—from only a slight forward inclination to 45°, then to the horizontal and beyond (with straight upper back).
Doing head or arm movements while holding the prone st., prone lying, or charge position.
Alternating back movement with arm movements, or with combined arm and leg movements.
Combining back movement with arm movements or leg movements, or both.

Types.

Forward bending of trunk (45° inclination from hips).
Forward-downward bending of trunk (to horizontal and beyond) with upper back straight, arms held rigid in one of the derived positions.

Stooping. Prone falling position. Foot placings, arm and leg raising from this position.
Forw.-downw. bending of trunk from the (wide) stride st. pos. with simultaneous movement of the arms forw. in an effort to touch the floor. Upper back is kept straight, however.
Forward bending of trunk, standing on one foot, other leg in line with the trunk.
Forward charge. Forw. bending of trunk from this position.
Reverse (backward) charge. Toe-support charge. Horizontal ½ st. pos.
Oblique charge with, or followed by, trunk twisting to same side. Forw. bending of trunk from this position.
[At bar stalls: Foot grasp charge. Forw. b'd'g from this pos.
Prone lying pos. (on bench). Forw. b'd'g from this pos.]

Progression.

Forward and forw.-downw. b'd'g of trunk:

Hip grasp
Bend
Cross (a)
Neck grasp
Cross (c), (d) and (e)
Oblique stretch
Stretch

stride st.
standing
close st.
walk (b) st.
walk (c) st.
walk (a) twist st.
charge (b)
charge (a) twist st.

} forward bending of trunk.

Hip grasp
Bend
Neck grasp
Stretch

stride st.
standing
close st.

} forward-downward bending of trunk.

Simple arm movements with alternate foot placing sidew., or forw., followed by forw. b'd'g, or forw.-downw. b'd'g of trunk:

Placing hands on hips
Arm bending
Forward bending of arms
Placing hands on neck
Arm flinging sideways
½ sideways bending of arms
Arm flinging forward-upward
Arm flinging sideways-upward
Bend st. arm stretching upward

with alternate foot placing sideways or forward,

} and forward bending of trunk.

Placing hands on hips
Arm bending
Placing hands on neck
Placing hands over head (or arm flinging forward-upward, or arm flinging sideways-upward)
Bend st. arm stretching upward

with alternate foot placing sideways,

} and forward-downward bending of trunk.

The above arm movements, combined with alternate foot placing obliquely outward and simultaneous trunk twisting, followed by forw. b'd'g of trunk.

Forw. b'd'g and forw.-downw. b'd'g of trunk, alternating with arm movements:

Bend Cross (a) Cross (c) Neck grasp Cross (e) Bend Neck grasp Cross (e) Stretch	stride st. standing close st. walk (b) walk (a) twist st.	forward bending of trunk, alternating with	arm stretching sideways. arm flinging sideways. arm rotation. arm stretching sideways. arm stretching sideways. arm stretching upward. arm stretching upward. arm stretching upward. arm parting, or bending and stretching upward.

Bend Cross (a) Neck grasp Stretch	stride st. standing close st.	forward-downward bending of trunk, alternating with	arm stretching sideways or upward. arm flinging sideways. arm stretching sideways or upward. arm parting or bending and stretching upward.

Stooping (deep knee b'd'g with forw. inclination from hips, back straight, hands on floor):

Hip grasp st.
Bend st.
Cross (a) st.
Neck grasp st.
Cross (c) st.
} stooping and return to starting position.

Alternating with arm movements:

Bend st. Cross (a) st. Neck grasp st. Cross (c) st. Reach st.	stooping, alternating with	arm stretching sideways, forward, upward. arm flinging sideways. arm stretching sideways or upward. arm bending and stretching or arm rotation. arm flinging sideways.

Alternate foot placing forw.-backw. from stooping pos., or from prone falling pos.

From a wide stride st. pos. with the arms in a derived starting pos. bending downw. with straight upper back (keeping knees straight), and making an effort to touch the floor, then returning to starting pos.

Bend
Cross (a)
Neck grasp
Cross (c)
} (wide) stride st. downward bending, touching floor, and return.

The same, alternating with arm movements:

Bend stride st. Cross (a) stride st. Neck grasp stride st. Cross (c) stride st. Cross (d) stride st. Stretch stride st.	downward bending touching floor alternating with	arm stretching sidew. or upw. arm flinging sideways. arm stretching sidew. or upw. arm bending and stretch. sidew. arm raising (or flinging upward). arm parting, or bending and st. upward.

Compound (2 count) arm movements (from fundamental pos.), the first part of which is combined with a wide alternate foot placing sidew., the second (a forw. movement of the arms) with a forw.-downw. b'd'g (touching the floor). Upper back straight:

Arm bending
Forward bending of arms
Arm flinging forward
Arm flinging sideways
Placing hands on neck
Placing hands over head

with alternate foot placing sideways (wide step), then forward-downward bending, touching floor. Return in reverse order.

Similar compound, alternating movements, starting from and returning to derived arm positions:

Bend st. arm stretching sideways or upward
Cross (a) st. arm flinging sideways
Cross (c) st. arm bending, or forward bending of arms
Neck grasp st. arm stretching sideways or upward
Stretch st. arm bending

with alternate foot placing sideways (wide step), then downward bending, touching floor, and return in reverse order.

Compound, combined 4 count movements, in which the "going" and "return" phases are dissimilar. The first part is a simple arm movement—bending or flinging; the second is a quick forw.-downw. bending of trunk combined with a double (wide) foot placing sidew. (jump) and a simultaneous forw.-downw. movement of the arms in an effort to touch the floor; the third is a (quick) trunk raising combined with an arm movement similar to the first; the fourth is a bringing of the feet together with a jump combined with a movement of the arms, either to the fundamental position, or to some derived position. In the forward-downward bending of trunk the upper back and the knees should be kept straight. Examples:

(1) Arm b'd'g; (2) foot placing sidew. with downw. b'd'g, touching floor; (3) trunk raising with arm b'd'g; (4) jump to fundamental st. pos.

(1) Arm b'd'g (or forw. b'd'g of arms); (2) foot placing sidew. with downw. b'd'g, touching floor; (3) trunk raising with arm b'd'g (or forw. b'd'g of arms); (4) jump to position with arm stretching sidew., or upw. (or flinging sidew.). (The repetitions start from this derived arm position.)

(1) Arm flinging sidew.; (2) foot placing sidew. with downw. b'd'g, touching floor; (3) trunk raising with arm flinging sidew.; (4) jump to fund. st. pos.

(1) Arm b'd'g; (2) foot placing sidew. with downw. b'd'g, touching floor; (3) trunk raising with arm flinging sidew., or forw.-upw. (bringing the arms straight over head); (4) jump to fund. st. pos. (bringing the arms, if over head, down through the side plane).

Forward bending of trunk, while standing on one leg. See balance exercises.

Forward and reverse charge, toe-support charge, etc. See charges.

[Types of back exercises done at the bar stalls:

Hip grasp, Bend, Cross (a), Neck grasp, etc. — foot grasp charge st. position; foot grasp prone lying position — Forward bend. of trunk, or arm movements from these positions].

Abdominal Exercises.

Principles.

Varying the starting position of the arms, so as to increase weight leverage and make the movement more difficult.
Varying the range of the movement, so as to increase weight leverage.
Doing arm movements from positions sustained by static action of abdominal muscles.
Increasing the severity of the movement by doing it with straight, instead of bent knee; with both legs, instead of one at a time.
Increasing the speed of the movement, so as to require more sudden effort.

Types.

Standing knee upward bending, leg flinging forw., and leg circumduction.
Lying knee upward bending, leg raising, and sinking sideways.
Kneeling (on one knee or both) backw. leaning of trunk.
Prone falling position (front leaning rest) and foot placing forw. and backw. from this position.
Trunk twistings.

[At bar stalls:
Foot grasp ½ standing backw. leaning of trunk.
Foot grasp sitting backw. leaning of trunk.

At chest weights:
Arm movements, standing with back to weights, abdomen retracted.

On quarter circle:
Arm swinging forw.-upw. and forw.-downw.

On suspension apparatus:
Hanging knee upw. bending, leg raising, etc.]

Progression.

Knee upw. b'd'g, leg flinging forw., and leg circumduction:

Hip grasp st., Bend st., Neck grasp st. — knee upward bending; leg flinging forward; leg circumduction — [L. and R. (movement repeated on one side at a time; weight settles on both feet at end of each movement). At first, stop at the change. Later make repeated changes without interrupting the movement.
Alternate.

(Diagonal) stretch lying, Neck grasp lying —
Knee upward bending—L. and R., both, alternate.
Knee upward bending and stretching (45°).
Leg raising—L. and R., both, alternate.
Leg raising and sinking sideways.

Kneeling backw. leaning of trunk (movement takes place at knee).

Hip grasp
Bend
Cross (a)
Cross (c)
Cross (e)
Neck grasp
Stretch

kneeling (on one knee or both) backward leaning of trunk

Also the various arm movements from the backward leaning position.

Prone falling position (reached by (1) stooping, (2) extending legs backward):

Prone falling position and return (4 count compound movement).
Prone falling foot placing forw. and backw.. May be done repeatedly, or only once, followed by return to standing pos. In the latter case it is a 6 count movement.
Prone falling arm bending—repeatedly or only once, followed by return to standing pos., making a 6 count compound movement.
Prone falling foot placing forw. and backw. (once), then arm bending and stretching (once), followed by return to standing position, making an 8 count compound alternating movement.

Trunk twistings, arm movements and side bending from the twist st. pos. See Lateral Trunk Exercises.

[Bar stall exercises:

Hip grasp
Bend
Cross (a)
Neck grasp
etc.

foot grasp ½ standing
foot grasp sitting
} backward leaning of trunk.

Bend
Neck grasp
} foot grasp sitting backward leaning of trunk } followed by trunk twisting.

Chest weight exercises (back to the weights, one foot forw., abdomen in):

Bend st. arm stretching forw.
Reach st. arm parting.
Standing (hands at side) arm swinging forw.-upw., and forw.-downw.
Alternate arm swinging forw.-upw., forw.-downw.
Alternate arm circles ("wind mills") with trunk twisting.
(Stretch stride st. forw. b'd'g of trunk.)

On quarter circle:

Arm swinging and alternate arm swinging forw.-upw. and forw.-downw.
Arm circles and alternate arm circles (both ways).

On suspension apparatus:

Hanging knee upward bending — Left and right.
Hanging knee upward bending and stretching forward — Alternate (one up, the other down).
Hanging leg raising — Both legs.

Hanging leg raising and leg parting.
Hanging knee upw. b'd'g with simultaneous trunk twisting.
Hanging leg raising followed by trunk twisting.
Swing jumps, starting swing, circles, upstarts, climbing, etc.]

Balance Exercises.

Principles.

Reducing the base by varying the starting position of the legs.
Raising the center of gravity by varying the starting pos. of the arms.
Doing arm movements while holding a pos. of difficult balance.
Doing leg movements while holding a pos. of difficult balance.
Doing head twisting while holding a pos. of difficult balance.
Combining arm movements with leg movements from a position with reduced base.
Varying the intervals between commands for repetitions of simple movements, or for the parts of compound movements.
Quick and unexpected changes from one side to the other when holding positions on one foot.
Doing a trunk movement while standing on one foot, and holding the position reached a varying length of time.

Types.

Toe standing position. Toe-knee-bend st. pos.
Toe standing march steps forw., backw. and sidew. on command.
½ st. pos. (on one foot), the free leg raised forw. or sidew.
Balance march steps, without and with knee upw. b'd'g or leg flinging forw. (touch step).
Heel raising, heel raising and knee b'd'g, especially from a pos. with narrow and elongated base.
½ hook standing quick change (one movement).
½ standing (one leg raised forw. or sidew.) quick change (one movement).
Knee b'd'g while standing on one foot (½ st. knee b'd'g).
Heel raising while standing on one foot (½ st. heel rais.) with and without mutual support.
Toe-support charge position.
Horizontal ½ standing position, reached from the toe-support charge pos. by raising the rear leg, or by the following movement:
½ standing forw. b'd'g or trunk with b'd'g of knee of supporting leg, while the other leg is raised backw. with straight knee.
½ st. forw. b'd'g of trunk with both knees straight, free leg in line with trunk.
½ st. side b'd'g of trunk, both knees straight, free leg in line with trunk.
Prone falling pos.; arm and leg raising.
Side falling pos.; arm and leg raising.
[Walking on balance beams in various ways.
Holding the toe-knee-bend st. pos. in landings of jumps, vaults and dismounts.]

Progression.

Toe st. and toe-knee-bend st. pos.:

Hip grasp, Cross (c) and (e), Neck grasp, Stretch } toe st., close toe st., walk (b) toe st., walk (c) toe st. } and { toe-knee-bend standing positions } { head twisting, or arm movements, from these positions.

Heel raising, heel raising and knee b'd'g, knee b'd'g with (simultaneous) heel raising, without and with arm movements:

Bend / Cross (a) / Cross (d) / Cross (e) — standing / close st. / walk (b) st. / walk (c) st. — arm stretching sideways or upward / arm flinging sideways / arm raising / arm stretching sideways or upward — with heel raising.

Hip grasp / Neck grasp — toe standing / walk (a) toe st. / walk (b) toe st. — knee bending

Bend / Cross (a) / Cross (d) / Cross (e) / Stretch — standing, close st. / stride toe st. / toe standing / close toe st. / walk (a) toe st. / walk (b) toe st. — arm stretching sideways or upward / arm flinging sideways / arm raising / arm stretching sideways or upward / arm parting — with knee bending.

When these movements are done from the standing and close standing positions the knee bending is done with simultaneous heel raising.

Balance march steps:

Hip grasp / Cross (c) / Neck grasp — toe st. march steps forward, backward and sideways, on command

Hip grasp st. / Cross (c) st. — balance march / balance march with follow step / balance march with knee upward bending / balance march leg flinging forward — each part on command, or continuous movement.

Positions and movements while standing on one foot:

Hip grasp / Cross (c) / Neck grasp / (Stretch) — ½ st. position, the free leg raised forward or sideways / ½ hook st. position — knee stretching (forward) from this position.

Quick changes from one foot to the other (one movement) in any of these positions.

Bend / Cross (a) / Cross (d) / Cross (e) / (Stretch) — ½ hook st. — arm stretching sideways or upward / arm flinging sideways / arm raising / arm stretching sideways or upward / arm parting — with knee stretching (forward).

This group may also be done as 4 count combined, compound movements (usually quick), started from the fund. pos. They may be done on command, or repeated in slow rhythm. In the latter case the class should be prepared to stop in any position without warning.

Reach / Cross (c) / Neck grasp — ½ st. (free leg raised forward) knee bending (supporting leg).

Cross (c) ½ st. (free leg raised forward or sideways)
Hip grasp ½ st. (free leg raised forward or sideways) } heel raising { with / without } mutual support

Bend / Cross (d) } ½ st. (free leg raised forward or sideways) { arm stretching sideways or upward with heel raising. / arm raising with heel raising.

½ st. (leg forw. or sidew.) arm circumduction with heel raising.

Toe-support charge and horizontal ½ st. pos.:

Hip grasp
Bend
Cross (a)
Cross (c) — toe-support charge position — Raising of rear leg to horizontal ½ st. position. (May also be taken, without or with arm movements, from standing position.)
Cross (e)
Neck grasp
Stretch

Forw. b'd'g and side b'd'g of trunk while standing on one foot:

Hip grasp st.
Bend st. — forward bending of trunk, free leg moving backward, in line with trunk.
Cross (a) st.
Cross (c) st. — same with bending of knee of supporting leg (to horizontal ½ st. position).
Neck grasp st.
Cross (c) st. — side bending of trunk, free leg moving sideways in line with trunk.
Stretch st.

The above may be done with simultaneous arm movements.

Prone falling and side falling positions and arm and leg movements:

Prone falling position: { alternate leg raising. / alternate arm raising. / alternate opposite arm-and-leg raising.

Side falling pos. Arm and leg movements. See Lateral Trunk Exercises.

Charges.

Principles.

Varying the position of the arms to increase weight leverage and difficulty of coördination.
Returning by follow step. Facing 90° at the change.
Combining charge with arm movements.
Doing arm movements while holding charge position.
Doing charges and arm movements as combined, compound movements.
Doing trunk movements while holding charge position.
Combining charges with trunk twisting (and with head twisting).
Doing arm movements while holding twist charge position.
Doing charges, trunk twisting and arm movements as combined, compound movements.
Doing charges, arm movements, trunk twisting and trunk bendings as combined, compound movements.

Types.

Oblique charge. Forward charge. Toe-support (reverse) charge. Reverse (backw.) charge. Reverse oblique charge.

Progression.

Hip grasp st. / Bend st. / Neck grasp st. } Olique / Reverse oblique } charge.

or, preferably,

Placing hands on hips
Arm bending
Placing hands on neck
Bend st. arm stretching upward
Arm flinging forward-upward, or sideways-upward

with { oblique charge. / reverse oblique charge.

Placing hands on hips
Arm bending
Forward bending of arms
Arm flinging sideways
Cross (a) st. arm flinging sideways
Bend st. arm stretching sideways, or upward
½ sideways bending of arms
Arm flinging forward-upward, or sideways-upward

with { forward charge. / toe-support charge. / reverse(backw.)charge.

Arm movements may be done repeatedly from some of the above charge positions, or only once. In the latter case the whole is done as a combined, compound movement:

Arm bending			arm str. sidew. or upw.
Forw. bending of arms			arm flinging sidew.
Arm flinging sidew.			arm rotation.
Arm flinging sidew., palms up	with { oblique / forward / toe support / reverse / reverse obl. }	charge, then	arm raising.
Placing hands on neck			arm str. upw.
½ sidew. bending of arms			arm str. sidew. or upw.
Placing hands over head, or			arm parting.
Arm flinging forward-upward			arm parting.

Charges followed by, or combined with, trunk and arm movements:

Arm bending with / Forward bending of arms with / Placing hands on neck with } oblique charge / reverse oblique charge } and trunk twisting or with trunk twisting { to same side. / to opposite side.

Arm movements may follow the trunk twisting, or they may be done simultaneously, thus:

Arm bending with / Forward bending of arms with } obl. charge / reverse obl. charge } then { arm str. sidew. / arm flinging sidew. { with trunk twisting to same side (as ch'rge).

Arm bending with { obl. charge / reverse obl. charge } then { arm str. upw., or one upw., the other downw. { with trunk twisting to either side.

(When the trunk twisting is done to the opposite side and the single arm stretching upw. is on the same side as the charge, a head twisting to the same side may be added.)

Placing hands on hips
Arm bending
Forw. bending of arms
Arm flinging sidew.
Bend st. arm stretching sidew. or upw.
Placing hands on neck
½ sidew. bending of arms
Arm flinging forw.-upw., or sidew.-upw.

with { forw. / toe-support / reverse } charge, then forw. bending of trunk.

(Arm stretching forw. (touching the floor) may be done with forw. bending of trunk. Usually done as an indefinite movement)

Placing hands on hips / Arm bending / Placing hands on neck / Arm flinging upward } with { obl. charge, / reverse obl. charge, / then or with } trunk twisting to same side, followed by forw. bending of trunk; or trunk twisting to opposite side followed by side bending of trunk.

These are 6 count compound movements when the trunk twisting follows the charge, 4 count combined, compound movements when the trunk twisting and the charge occur simultaneously. The distinction is indicated by the words "then" and "with."

In this last group arm stretchings may also follow or be combined with the trunk twisting, or be combined with the forw. b'd'g and side b'd'g of trunk. Examples:

Arm bending with { obl. charge, / reverse obl. charge, } arm str. sidew., or upw., with trunk twisting, } then { forward bending of trunk.

Bend st. / Cross (a) st. { obl. charge / reverse obl. charge } { with trunk twisting and simultaneous arm stretching (or flinging) sidew. or upw., } { followed by forw. bending of trunk.

Arm bending with { obl. charge / reverse obl. charge } { with simultaneous trunk twisting to same side, } { then forw. bending of trunk with arm stretching forw.
{ with simultaneous trunk twisting to opposite side, } { then side bending of trunk with arm stretching sidew.

Most complex movements of this kind would be extremely difficult to do in an acceptable manner as definite exercises. Some of them, however, are often used, without too much attention to detail, as composite, indefinite movements, for the all-round muscular exercise they represent.

7. Progression of Apparatus Exercises.

General Considerations. As previously suggested gymnastic apparatus work may for convenience be grouped under three main heads: Suspension Exercises; Arm Support Exercises; Jumping and Vaulting. The progression of these is, as in the case of free-standing exercises, partly a matter of definiteness or "good form"—precision, good posture, balance and proper weight distribution, vigor, speed and animation. In apparatus exercises, also, complexity and severity are, perhaps even more than in free-standing work, determining factors in progression. In apparatus work complexity—and hence progression—cannot so readily or to so great an extent be made synthetic, i.e., be expressed in terms of combination and alternation of simple, definite movements, as in the case of free-standing exercises. It is rather a matter of careful selection and definition of types, with the right estimation and proper grading of these types, according to their inherent character, in the order of their difficulty or severity or both. Most of these types are relatively complex movements—composite, blended and not capable of much subdivision. Hence they cannot always be arranged in a way to satisfy all demands of a logical progression. There are often "gaps" which cannot be satisfactorily filled. Types or combinations which might serve as intermediate or preparatory steps are sometimes wanting; or, if devised and defined on theoretical grounds, based on attempted analysis or subdivision, may be more difficult in some respects than the exercises for which they are intended as a preparation. Thus it happens in some cases that, while there is a great abundance and variety of material suitable for more or less advanced classes, there may be a scarcity of simple, easy and yet interesting exercises which may be used as preparatory work in classes of less ability or training. The reverse may be true in other cases. The different pieces of apparatus, as well as the different types of exercises, vary in this respect. Again, many exercises may be performed, with more or less modification, on more than one apparatus. As has already been pointed out, a given type may thus represent varying degrees of difficulty when done on different pieces of apparatus. This should always be borne in mind and taken advantage of as far as possible. With a fairly complete equipment a more finely graded and comprehensive progression is thus possible in many lines, when it would otherwise have to be uneven or inadequate.

Among the factors which should be considered in progression of apparatus work are: range of movement, momentum of the body, variations in the weight distribution on arms and legs, in

the leverage of the weight to be moved, in the stability of the equilibrium. Additions to or modifications of exercises with a view to introduce variations of these conditions are therefore important elements of progression. Thus, for example, certain types of suspension exercises may be made easier or more difficult according to whether they are done with or without swing from waist or shoulders, whether started from a stationary hanging position, or by a standing or running jump from the floor, whether behind or directly under the apparatus. Many arm support exercises and vaults may be modified in similar manner with a view to facilitate their execution or make it more difficult. Almost any exercise may be made more difficult by modifying its final phase, the dismount or landing, as by introducing turns, or by adding arm or leg movements.

As the field is wide and the possibilities for variations, combinations, and modifications are practically unlimited, no attempt will be made to illustrate the progression of gymnastic apparatus exercises in an exhaustive manner. Only comparatively simple and easy types, suitable for ordinary class purposes, will be enumerated and their progression indicated, at least through the elementary stages. For a more elaborate treatment of this topic and progression of advanced types of exercises the reader is referred to manuals and compendia devoted primarily to this phase of the subject.*

Suspension Exercises.

Principles.

Increasing the amount of body weight carried by the arms. This applies chiefly to preparatory types, such as the fall hanging and prone hanging positions. Also to various forms of climbing.

Varying the work on arms and upper trunk muscles by doing certain exercises, such as hand traveling, without or with swing; with bent instead of straight arms.

Increasing difficulty and amount of muscular work by variations of grasp, start, range and sequence of movement, and landing.

Combinations and sequences of increasingly difficult movements.

Types.

[Arm bending with overhead pulley weights.]

Grasp bend toe standing arm stretching with knee bending.

Fall hanging position. Arm b'd'g, leg raising, and hand traveling from this position.

Prone hanging position. Circumduction, change to fall hanging, and arm bending from this position.

Hanging position. Ordinary, reverse and combined grasp.

*For example, "Gymnastic Nomenclature of the Y. M. C. A."; "Code Book of Gymnastic Exercises," by Ludwig Puritz.

Arm bending, alternate arm b'd'g, change of grasp, knee upw. b'd'g, leg raising, lateral swing and trunk twisting, all starting from the hanging position.
Hand traveling of various kinds.
Climbing of various kinds.
Swing jumps (short underswing); starting swing; exercises of various kinds while continuing swing, such as hand clapping, change of grasp, turns, and dismounts.
Inverted hanging position and movements from this position.
Circles, mounts, upstarts, and uprise.

Progression.

Grasp bend toe standing arm stretching with knee bending.

The apparatus is grasped at height of chin. Progression consists in doing the movement more and more with the arms and less with the legs. May be done with the aid of rings, vertical ropes, poles and ladders, horizontal and parallel bars, boom and high bar stalls. When the last named apparatus is used, the movement is best done while standing on one foot.

Fall hanging position { Low horizontal bar and boom; parallel bars; rings; vertical ropes and poles; rope ladders.

The body, face up, is partly suspended on the arms, partly supported on the heels. The lower the apparatus, the greater is the proportion of the weight suspended on the arms.

Fall hanging { Arm bending. Alternate leg raising.
Touching floor with L. and R. hand.
Hand traveling sideways.

Bent arm fall hanging hand traveling sidew. or backw.—Low boom.

Prone hanging position. Apparatus the same as for fall hanging pos. The body, face down, is partly suspended on the arms, partly supported on the toes. The lower the apparatus, the more powerful is the exercise; also the greater is the lumbar hyperextension.

Prone hanging position and return by moving one foot at a time, by moving both feet simultaneously
Prone hanging change to fall hanging position by moving both feet forward or to one side or by moving each foot to its respective side.
} Any of the above mentioned apparatus.

Prone hanging arm bending—on rings, vertical ropes, or rope ladders.

Fall hanging or Prone hanging { Circumduction L. and R. (The feet are kept on the floor, as a pivot) } rings.

Hanging position. Any suspension apparatus sufficiently high above floor.

Mount to the hanging position; dismount without and with turns.

Hanging:
- Knee upward bending, L. and R., alternate, both.
- Knee upward bending, and stretching forward, alternate, both.
- Leg raising forward, L. and R., alternate, both.
- Leg raising sideways, L. and R., simultaneously, both to one side.
- Side swing from waist.
- Side swing from shoulder (with alternate arm bending).
- Knee upward bending with alternate twisting (and swing).

Jump, mount to bent arm hanging position, slow arm stretching, dismount.

Hanging position with reverse, combined and ordinary grasp	Arm bending, alternate arm bending; changes of grasp (preceded by quick arm bending).

Hand traveling.

Sideways—with straight arms; with and without swing; with swing and alternate arm bending; with bent arms	High boom, suspended parallel bars, horizontal ladder (hands on outside or on rungs), horizontal bar, bar stalls.
Forward and backward—with straight arms; with and without swing; with one or both knees drawn up; with alternate knee upward bending; with bent arms	Horizontal ladder (hands outside). Suspended parallel bars.
Forward and backward on rungs, one rung at a time, or skipping one rung or more at each step; with straight arms, or bent arms.	Horizontal ladder.
Rotary traveling, turning L. and R., forward and backward, with straight arms, or bent arms.	Boom or suspended parallels.
Rotary traveling, turning L. and R. with swing and alternate arm bending.	Horizontal ladder (rungs). Traveling rings. Vertical poles and ropes.
Rotary traveling, turning one way, hands on same side; with straight arms, or bent arms.	Boom; suspended parallels.
Short jumps forward, backward and sideways. Long, swinging jumps forward and backward.	Horizontal ladder. Suspended parallels.
Jumps forward and backward on rungs; from sides of ladder to rungs.	Horizontal ladder.
Rotary traveling forward and backward jumping from one bar to the other between each step.	Suspended parallels.

Climbing.

Using arms and legs; Using arms only. — Bar stalls; rope ladders; vertical ropes (one or two or across several); poles; inclined ropes.

Serpentine climbing. — Oblique, vertical, horizontal, turning alternately L. and R., spiral. — Vertical and horizontal window ladder; double boom.

Swing jump (short underswing).

Running start, from one foot or both feet; without and with turns on landing. — High and low horizontal bar and boom; ropes (two or one); rings.

Standing start, from one foot or both feet, without and with turns. — High and low horizontal bar. Horiz. ladder; suspended parallels.

Start from the hanging position. — High horizontal bar and boom. Suspended parallels; horiz. ladder.

Start from the front rest position. — High and low horizontal bar and boom.

Start from the back rest, or sitting position, by turning L. and R. or by dropping backward, bending at hips and passing feet between hands under bar; same from riding rest. — High and low horiz. bar.

Swing jump, catch and dismount; Long swinging jumps. — Horizontal ladder; Suspended parallels.

Starting swing, dismounting on first backw., next forward or any succeeding swing, without or with turns on landing.

Running start from (one or) both feet. — High horizontal bar; ropes; rings; rope ladders; giant stride.

Standing start, from both feet. — High horizontal bar and boom. Horiz. ladder; suspended parallels.

Start from the hanging position by arm bending, raising feet, etc. — High horizontal bar and boom. Suspended paral.; horiz. ladder.

Start from front rest position by long or short underswing, or by forward circle. — High horizontal bar and boom.

Start from back rest and riding rest. (As described above, under swing jump.) — High horizontal bar.

Swinging exercises.

Hand clapping, change of grasp, turns; at the end of backward or forward swing. Raise feet at end of forward, straighten at end of backward swing. — High horizontal bar.

Jump forward and backward at end of respective swings. Mount to upper arm hanging pos. at end of b'kw. swing. — Suspended parallel bars.

Turns, cut-offs, swinging in the inverted position, circles, up-starts, etc. — Rings.

Miscellaneous exercises, without and with swing.

Inverted hanging position, dismount by half circle forward or backward; pull up over bar to back rest. — High horizontal bar and boom; horizontal ladder and suspended parallels (ends), rings, ropes (one or two); poles, rope ladders.

Backward circle to front rest, starting with a jump from behind or under the bar, or from the hanging position. Return by forward circle, short underswing, side vault, etc. — High horizontal bar and boom.

Free backward circle, starting from and returning to the standing position, or the front rest position. — High horizontal bar.

Quick backward circle, from standing position: to floor (passing legs between or outside arms); to arm support position. Cut-offs. Upstart to arm support position. Combinations. — Rings.

Quick backward circle, starting from and returning to standing position. — Ropes, poles.

Mounts to front, back and riding rest positions by hooking one knee or both, inside or outside of hands; by circles; by front and back upstarts, uprise, swings: by pull-and-push up; from standing, hanging or swinging start; with ordinary, reverse or combined grasp; without and with turns;
Followed by forward and backward body, knee and seat circles; vaults, turns and swings.
Various combinations and sequences of any of these, finished by direct forward or backward dismounts; by vaults, short underswing, knee and hock circles; without and with turns; by snap-off and somersaults, or long underswing and somersaults. — High hor. bar.

*Arm Support Exercises.**

Types.

Prone falling position (front leaning rest).
Side falling position (side leaning rest).
Front rest. Oblique front rest.
"Free" front rest. Hand stand. Hand spring.
Back rest. Oblique back rest.
Cross rest. Riding rest.
Leg circles through "free" front rest and "free" riding rest.
Swings and leg circles through cross rest.
Mounts, upstarts and miscellaneous exercises, starting from or passing through any of these positions.

Prone falling position (front leaning rest).

From running or standing start, as a preparatory exercise for face vault. — Horse; vaulting box.

Preceded by a forward and backward swing. Parallel bars.

*As the author is opposed to the extensive practice of this class of exercises, only a few types will be enumerated, chiefly those which occur as parts of vaults and suspension exercises.

Side rail position (side seating rest)

From running or standing start, as a preparatory exercise for side vault. Sustained or momentary — Horse; vaulting box; low hor. bar and boom.

Front rest (balance weighing) position.

From running or standing start; preceded by swing (parallel bars). Dismount without and with turns. — Horse (with and without pommels) buck. Low and high horizonts bar and boom. Parallel bars hands on either bar.

Oblique front rest position.

Sustained or momentary. One hand on each bar.

Preceded by forward and backward swing, or by d[illegible] rect mount. — Parallel bars

Dismount to either side, without and with turns.

"Free" front rest (momentary horiz. pos., supported on arms.

From running or standing start, from fron[illegible] rest; or from swing (parallel bars). With le[illegible] flinging L. and R. or with leg parting. Fin[illegible] ishing without and with turns; or by fac[illegible] vault dismount. Continuing to hand stand[illegible] high face vault, or hand spring. — Saddle boom; horse buck, box; low (or high) horizontal bar or boom; paralle[illegible]

Back rest position.

From standing start, facing or side to ap[illegible] paratus; or preceded by swing, le[illegible] circles, inverted hanging position, or b[illegible] back upstart. Dismount forward with[illegible] out or with turns; backward by circle or[illegible] roll, or by dropping back, passing feet between hands and finishing with short underswing. — Horse (buck, box); horizontal bar and boom; parallel bars

Oblique back rest position. Parallel bars; long horse.

Reached from forw. swing between bars, then passing legs outside one bar until stopped by hand on that side; or by direct mount. Used as an intermediate sustained or transitory position. May be followed by back vault dismount to either side, by turn to front rest, by additional swings, etc.

Cross rest position. Parallel bars.

Reached by direct mount, from end of or between bars; from ends of bars or mid-bars by underswing and upstart, or by cut-offs; from upper arm hang or swing, by upstart or uprise, etc.

Is a starting or transitory intermediate position in the majority of swings, turns, circles, scissors, vaults, rolls, drops, upstarts, etc. on the parallel bars.

Riding rest position.

(a) Cross riding rest—facing end of apparatus
(b) Side riding rest—facing at right angles to apparatus. — Parallel bars; horse, buck; horiz. bar.

Weight supported partly by arms, hands in front or behind in cross riding rest, at sides in side riding rest.

Used as a starting or transitory intermediate position in swings, knee circles, leg circles, vaults, etc., on the above mentioned apparatus.

Under this head would come: 1. Such free-standing *ensemble* exercises as jumps on toes (spring jumps) of various kinds with foot placings, knee upw. bending, leg flingings, crossing of feet, knee b'd'g, cross-step, cut step, etc., leading up to dancing steps.

2. Free-standing (*ensemble*) jump in place, jump forw. and sidew. without and with turns, arm and leg flinging, rebound, one or more start steps.

3. Jumping down—from benches, bar stalls, vaulting apparatus.

4. Hop, step and jump (individual), each element practiced separately, or two of each, or any combination and sequence of any two or all three elements. For this no other apparatus than a mat or two is needed.

5. Standing broad jump—single, or two or more.

6. Running hop, step and jump, and running broad jump—not very suitable for indoor practice unless thick and springy mattresses are available.

7. Running high jump.

(a) Gymnastic—for form and landing; from either foot or both feet; with turns either way; without and with spring board.

(b) The various styles of competitive jump—for height.

8. Hurdling—the elements of approach and form.

9. Standing high jump—front and side jump.

10. Tumbling—at least elementary types such as forw. and backw. rolls, hand-and-head spring, hand spring, cartwheel, dive, etc.

The progression is partly from the easier to the more difficult types; partly in improvement of form; partly in increasing distance or height.

B. *Vaulting.*

Principles.

Progression from the easier to the more difficult types; also by doing the same type on different apparatus.

Adding turns, arm movements and leg movements.

Combinations and alternations with suspension and arm support exercises.

Types. I. Horizontal Vaults. II. Vertical Vaults.

I. Mounts: to kneeling pos. on one knee or both; to standing pos. on one foot or both; to (cross) riding position; squat mount, straddle mount; rear squat, straddle and riding mounts.

Dismounts: directly forward, backward or sideways; face, side, or back (vault) dismounts.

Complete vaults: knee vault; squat vault; straddle vault; ½ knee ½ straddle vault; ½ squat ½ straddle (wolf) vault; jump (thief) vault; front (sheep) vault; side straddle vault; rear squat and rear straddle vault; cross legged vault.

II. Preparatory exercises: free front rest with leg flinging L. and R.; mount to prone falling position (front leaning rest), to side falling position (side leaning rest), to oblique front and back rest.

Dismounts—as above.

Complete vaults: face (front) vault; side (flank) vault; back vault, oblique back vault.

Progression.

I.* Mount to kneeling position, on one knee or both. Running or standing start. When on one knee the free leg is behind and kept straight.
Dismount backward, using the hands, or forward without using the hands. Horse, buck, vaulting box.
Or the mount may be followed by stepping (one foot at a time) or springing (both feet simultaneously) to standing position, then dismount, as below.

Dismount forw., backw., or sidew., ordinary or rising, springing from one foot or both, without and with turns—90° to 360°—arm and leg flinging sidew., hand clapping, touching toes, etc.

Squat mount.
Running or standing start. Knees between arms. Straighten to fund. st. position. Dismount as previously described. } Saddle boom; side horse with and without pommels; box; buck; low horizontal bar and boom.

Straddle mount.
Legs outside of arms, knees straight. Dismount as previously described. } Saddle boom; side horse with and without pommels; box; horizontal bar and boom.

½ knee ½ straddle mount.
One knee between arms, to kneeling position; the free leg raised sideways, free or foot on apparatus. } Buck; ends of horse and box.

½ squat ½ straddle mount.
As preceding, but the knee is drawn up higher and the foot on that side, instead of the knee, is placed on the apparatus. Rising dismount. } Buck; saddle boom; side and long horse; low horiz. bar and boom.

Mount to cross riding position.
On inside of thighs. All joints extended.
Hands preferably behind thighs touching apparatus lightly or not at all.
Dismount forward, backward, or sideways (by ½ circle of one leg); or by face vault or back vault dismount. Long horse and buck; parallel bars.

Rear squat, straddle and riding mounts.
Like corresponding front mounts, but preceded by 180° turn L. or R. This occurs after the spring. } Apparatus as in corresponding front mounts.

Knee vault.
Momentary support on lower leg, followed by spring. Knee should project in front of apparatus. Landing without and with 90° turn. } Horse; buck; vaulting box.

*In vertical mounts and vaults the hands should remain on the apparatus only a brief instant. The arm movement should be, like the leg movement, a quick spring. Except in the case of the low horizontal bar and boom a running start is preferable to a standing start.

Squat vault.

Knees pass between arms and are extended as soon as apparatus is cleared. Trunk erect. Spring from hands. Try for height. Land facing forward, or with R. and L. turns (90° to 360°).	Saddle boom; side horse; box; buck; low bar and boom; long horse.

Straddle vault.

Legs pass outside of arms, knees straight, body erect. Spring from hands. Try for height and distance. Landing without and with turns (90° to 360°).	Buck; saddle boom; side horse; low bar and boom; long horse (hands on near end).

One hand straddle vault.

As straddle vault, but using only one hand.

½ knee ½ straddle vault.

Momentary support on and spring from one lower leg. Knee should project well beyond apparatus. Free leg raised sideways.	Buck; ends of horse and box.

½ squat ½ straddle vault (wolf vault).

One leg, with knee drawn up in front, passes between arms, the other leg is raised sideways. Trunk erect. Spring from both hands simultaneously. Try for height and distance. Turns.	Saddle boom; horse, buck; box; low horizontal bar and boom.

Jump vault (thief vault).

The spring is from one foot, as in a jump.

Feet pass over apparatus first. Hands give support on the descent. Without and with turns.	Saddle boom; horse; buck; vaulting box.

Front vault (sheep vault).

The apparatus is cleared with the body as nearly as possible in the fundamental position, but slightly arched, chest leading. The knees may have to be flexed more or less.	Saddle boom; horse; buck; vaulting box.

Side straddle vault.

The apparatus is cleared in what might be called a "free" side riding position—one side leading. The 90° turn is made after the spring. Used as a preparation for the rear straddle and cross legged vaults.	Long buck.

Rear (or backward) squat vault. Rear (backward) straddle vault.

As corresponding front (or forward) vaults, but with a 180° turn after the spring, so that the apparatus is passed while the body is moving backward	Saddle boom; horse; buck; box; low bar and boom.

Cross legged vault

Like straddle vault, but with legs crossed. The hips are also turned considerably, but the shoulders remain square to the front. Considerable height is necessary.	Buck; possibly long horse.

Without and with leg flinging sideways, landing without and with turns.

Mounts to prone falling and side falling positions.

Like face and side vaults. Position momentary or sustained.
Dismounts—face and side vault dismounts, without and with 90° to 180° turns.

Box; horse; parallel bars.

Face (front) vault.

Body facing the apparatus at the moment of passing it. Feet are carried at least as high as the head. Weight of body should be well forward, arms straight. Landing without and with turns either way.

Horse; vaulting box; buck; saddle boom; low horizontal bar; parallel bars.

NOTE.—When the feet are carried lower than the head, the vault is called low face vault; when considerably higher, approaching a handstand, it might be called high face vault. The former is done over the buck and ends of the horse, as a preparatory exercise. The latter as an advanced form.

Side (flank) vault.

The side of the body is turned toward the apparatus. Feet are carried at least as high as the head. Supporting arm straight and inclined, so that the hand is opposite the waist. Landing without and with turns either way.

Saddle boom; horse; box; buck; low bar and boom; double boom; parallel bars.

Variations: Low side vault. One hand side vault.

Back vault.

The back of the body, flexed more or less at the hips, is turned toward the apparatus. After the spring one hand is lifted to let the body pass. It is then replaced and receives the whole weight. Landing without and with 90° to 180° turn toward apparatus.

Parallel bars; side and long horse; box; buck; low horizontal bar and boom; saddle boom; double boom.

Oblique vault.

This is essentially a back vault, resembling in some respects the jump vault.

The approach is diagonal; the spring is from the outside foot; only the near hand is placed on the apparatus at the take-off, but its place is taken by the other hand when the body is passing the apparatus. Landing without and with ¼ or ½ turn toward apparatus.

Long horse; long box; long buck; low bar; double boom.

Variations. One hand oblique vault, with outside turn (away from apparatus). The back vault with outside turn on the parallel bars is of similar character.

On the double boom the oblique vault may be done by a spring from both feet, or from the outside foot only. The outside hand grasps the upper boom. Only the outside turn is here feasible.

Screw vault.

This is a term used to designate either face vault with ½ (180°) turn away from the apparatus, or a back (or oblique) vault with ½ turn toward the apparatus. In the latter case the body must be straightened from the previously flexed position at the hips.

High face vault on the double boom.

This consists of a direct mount to a momentary front rest on the upper boom, flexion at the hips with release of one hand, which reaches down and grasps the lower boom, the body in the meanwhile turning toward the side of the upper hand. Then follow extension at the hips with arching of the back and what might be called a high face vault dismount, the hand on the lower boom being released with a push and the hand on the upper boom being shifted, at the last moment, to the lower boom.

Hand stand: face, squat and straddle vault dismounts.

The position may be held a varying length of time, or the movement may progress evenly throughout. In the latter case it is a vault in the true sense and might be named hand stand (or balance) face, squat or straddle vault.

Hand spring.

Position may be held, or the movement, quick or slow, progress evenly.

C. *Swing Jumps.*

Already described under Suspension Exercises. When used to represent the Jumping and Vaulting class of exercises, the swing jumps should be started with a run. The spring may be from one foot or both, the approach perpendicular or diagonal. When clearing a height, e.g., the lower boom, or the rope or bar on the jumping standards placed directly below, or below and in front of, the high bar or boom, the approach may also be diagonal or at right angles to the apparatus. In the latter case, the legs may be raised either directly sidew., or forw., or sidew.-forw., with a twist of the hips and turn of the body. The swing jumps may thus be made to resemble a side vault, a back vault, a jump vault or an oblique vault.

When the swing jump is done with one vertical rope (or one rope ladder), the legs may be raised and the body then suddenly straightened with a 180° turn toward the side of the lower hand. The movement thus closely resembles the pole vault.

8. Progression of Gymnastic Lessons.

The following gymnastic lessons may serve to illustrate the general application of principles of selection and progression of gymnastic exercises—free-standing and apparatus—in the adaptation of the work to high school and college conditions.

A reasonably well-equipped gymnasium and from thirty-five to forty minutes actual working time will be assumed. Also, in the case of high school students, previous training in the "definite" style of work. In the case of college students such previous train-

ing cannot, as a rule, be counted on and hence will not be assumed. If, however, sufficient opportunity be afforded to "prepare the students' mind" for the character and purpose of the work, so that their intelligent interest and coöperation can be obtained from the outset, the first lessons may be made of a fairly definite character even here. If such "preparation" is not feasible, the first few lessons for college students should preferably contain a number of exercises of a more or less indefinite character, representing lively action and abundant general muscular exercise. Then, by degrees, exercises of a more definite character may be substituted, or the types given at first may be redefined, as far as possible, so as to call for more exactness of detail, holding of positions, etc. In either case the class should cover approximately the same ground during the year's work.

As the purpose is merely to indicate, by fairly wide steps, the progression of the most useful and representative types and combinations, only the first, fourth, eighth and twelfth lessons of each series of twelve will be given. Each lesson is to be given three or four times, except the first, which need not be repeated more than once. This much will probably be necessary in order to cover all preliminaries in a thorough manner. The change from one lesson to the next may be complete, or more or less gradual (by substitution of some exercises). The former is preferable. In that case it may not be possible to give all the exercises the first time. Each time a lesson is repeated the exercises are done less on command and with more rhythmic repetition.

Series 1. High School Girls. First Year.

Lesson 1.

I. Alignment on two ranks. Numbering. Open order by forward and backward steps. Review facings on two counts.

II. 1. Alternate foot placing sideways with placing of hands on hips (on command once or twice, then repeated rhythmically).*
2. Hip grasp standing heel raising.
3. Neck grasp standing backward moving of head (and elbows with chest expansion. On command three or four times. Slow, powerful movement; position well sustained.)
4. Bend standing stooping (touching the floor, bent knees, back straight) and return.
5. Hip grasp stride standing side bending of trunk.

* Generally speaking, each exercise should be given at least once on command, then repeated rhythmically six or ten times. In some cases rhythmic repetition is not suitable. Such exercises should be repeated only two or three times on command. Others should be started at once as rhythmic movements. The former procedure will be indicated by "(C)," the latter by "(Rh)."

6. Arm bending and stretching sideways (C).
7. Hip grasp standing knee upward bending L. and R. (Rh).
8. Bend stride standing trunk twisting (C). (Try to move only above hips.)
9. Hip grasp standing jumping on toes with foot placing sideways. (Rh). ("Stride jump.")
10. Arm raising sideways with backward bending of head (C).

III. Flank marching. Short run; march around once; then arm rotation with backward bending of head and deep breathing.

Lesson 4.

I. Front and rear marching, changing direction during march. Open order by forward and backward steps, on one command. Facings on one count. Backward bending of head.

II. 1. Bend standing arm stretching sideways with heel raising.
2. Hip grasp stride standing alternate knee bending (two counts each side).
3. Arm circumduction on three counts (arm flinging forward-upward, then sideways with palms up, then downward), with backward bending of head.
4. Alternate foot placing sideways with (placing of) hands on hips, and forward-downward bending of trunk (to horizontal or beyond, upper back straight).
5. Neck grasp walk (a) st. trunk twisting (C).
6. Arm bending and stretching sideways and downward. (Uneven rhythm.)
7. Hip grasp st. leg flinging sidew. L. & R. (Unexpected changes, without stopping. Started rhythmically.)
8. Cross (a) prone st. arm flinging sideways (C).
9. Neck grasp stride st. side bending of trunk. (Try rhythmic repetition.)
10. Jump forward with two (running) start steps, L. & R.
11. Bend st. slow arm stretching upward with backward bending of head.

III. Horizontal ladder: Hand traveling forward and backward without swing.

or

High boom: Hand traveling sideways, L. & R., without swing.

IV. Standing hop, step; step, jump; two standing broad jumps.

or

Vaulting box: Face vault mount to prone falling position. Mount to kneeling position, dismount forward.

V. Run, march; or dance. Breathing exercise.

Lesson 8.

I. Front, rear and flank marching with (not too rapid) changes of direction during march. Open order by forward and backward steps, followed by facing, all on one command.

II. 1. Hip grasp standing alternate heel-and-toe raising.
2. Arm bending and stretching sideways with alternate foot placing sidew. and knee bending.
3. Neck grasp walk (b) st. backw. arching of trunk (C).
4. Hip grasp standing alternate leg flinging forward (Rh).
5. Forward bending of arms with alternate foot placing forward, and trunk twisting.
6. Bend close st. forward bending of trunk, alternating with arm stretching diagonally upward.
7. Hip grasp ½ st. (leg forward) knee bending (C).
8. Alternate foot placing sidew. with hands on neck, and side bending of trunk.
9. Oblique charge with hands on hips. (If rhythmic repetition is tried, the position should be held a relatively long time.)
10. Jump on toes with foot placing sidew. and arm flinging sidew.-upw. (Rh).
11. Reach st. slow arm parting, palms up, with backw. bending of head (C).

III. Window ladder: Oblique (zigzag) climbing.

or

Rope ladders: Climbing with hands and feet, each step on count. First one pupil, then two, on each ladder.

IV. Running high jump from L. & R. foot, with 90° turn.
Running high jump from both feet.

or

Buck: Low side vault L. & R.; Straddle vault.

V. Run, or dance, or game.
Breathing exercise.

Lesson 12.

I. Front, flank, and rear marching. Fairly rapid changes of direction during march. Starting march and halting with facings.

II. 1. Forward bending and side-flinging of arms with alternate foot placing forward and heel raising.
2. Hip grasp standing heel raising and deep knee bending.
3. Alternate foot placing sideways with hands on neck, and backward arching of trunk.
4. Bend stride standing downward bending, touching floor (straight upper back), alternating with arm stretching upward.
5. Hip grasp standing alternate leg flinging sideways (Rh).
6. Arm bending and stretching, one sideways the other downward.
7. Forward charge with hands on neck (C).
8. Hip grasp walk (b) st. side bending of trunk (C).
9. Prone falling position and return.
10. Hip grasp ½ st. rocking (cut) step forward-backward, with foot placing sideways on seventh count and change of feet on eighth count (Rh).
11. Arm circumduction (forw.-upw., sidew.-downw.) with backward bending of head (C, first count quick, second slow).

III. Vertical ropes: Climbing (using arms and legs).

or

Boom: Rotary hand traveling forward. Standing swing jump.

IV. Vaulting box: Face vault. Knee vault.
or
Horse: Side vault. Oblique (back) vault.

V. Run, dance, or game.
Breathing exercise.

Series 2. High School Girls. Second Year.

Lesson 1.

I. Alignment on two ranks. Front and rear marching. Open order by forward and backward steps. Facings on two counts. Try on one count. Backward bending of head.

II. 1. Hip grasp standing alternate toe raising (Rh).
2. Arm flinging sideways with knee bending, heels off (Rh).
3. Bend stride standing backward arching (C).
4. Hip grasp stride st. forward-downward bending of trunk (C).
5. Arm bending and stretching sideways and downward (C and even Rh).
6. Hip grasp standing leg flinging sideways L. & R. (Rh).
7. Cross (a) st. forw. bending of trunk (C).
8. Hip grasp walk (b) st. heel raising (C and Rh).
9. Neck grasp stride st. trunk twisting (C).
10. Jump in place with side flinging of arms (C).

III. Bar stalls:
Climbing up and down (each step on command).
Grasp high ½ st. arm stretching and bending with knee bending and stretching.

IV. Run, march; toe march.
Arm rotation with backward bending of head (C).

Lesson 4.

I. Front, rear and flank marching with changes of direction during march. Halts with facings. Begin opening order by side steps. Head movements.

II. 1. Alternate foot placing outward with hands on hips, and heel raising.
2. Cross (a) stride st. arm flinging sideways with knee bending.
3. Bend walk (b) st. slow arm stretching diagonally upw. with backward bending of head (C).
4. Hip grasp st. alternate knee upward bending (Rh).
5. Neck grasp stride st. trunk twisting all the way from one side to the other in one quick movement.
6. Bend prone st. arm stretching sideways (C).
7. Hip grasp ½ st. (leg sidew.) change feet in one quick movement (C).
8. Arm bending with oblique charge. (Rhythmic repetition, with positions well sustained.)
9. Alternate foot placing sideways with hands on neck, and side bending of trunk.
10. Hip grasp st. jump on toes with foot placing sideways and crossing of feet (Rh).
11. Arm circumduction with backward bending of head (C).

III. Window ladder: Horizontal or vertical climbing. Jump through in two movements.

or

Rope ladders: Climbing (one or two on each ladder) for speed. Run, start swing, dismount first on backward, then on forward swing (each pupil using two ladders).

IV. Running leap from L. & R. foot (preparation for hurdle). Hurdle. Running high jump from each foot, and from both, with turns on landing.

or

Saddle boom (or horse with pummels): Running free front rest. ½ squat mount (free leg behind), rising dismount. Squat vault.

V. Run, march, balance march; or dance, or game.
Breathing exercise.

Lesson 8.

I. Front, flank and rear and oblique marching with rapid changes of direction. R. & L. by file and by twos.

II. 1. Bend walk (b) st. arm stretching upward with heel raising.
2. Side lunge with (placing of) hands on hips.
3. Neck grasp st. backw. arching of trunk, alternating with quick arm stretching sidew., palms up.
4. (1) Arm bending; (2) foot placing sidew. with downward bending (touching floor); (3) trunk raising with arm bending; (4) jump to fundamental position.
5. ½ hip grasp st. leg flinging sidew. L. & R. with opposite arm flinging sidew.-upw. (Rh).
6. Neck grasp toe st. balance march forw. (each step on command).
7. Arm bending with forward charge, then arm stretching sidew.
8. Hip grasp st. jump on toes with alternate knee upw. bending.

III. High boom: Rotary traveling forw. Running swing jump.
Low boom: Front rest position.

or

Horizontal ladder: Rotary traveling forward on rungs. St. swing jump. Short jumps forward, hands on outside.

IV. Bar stalls: Hip grasp prone lying forw. bending of trunk (benches) (C).
Hip grasp opposite sitting backw. leaning of trunk (benches) (C).
Grasp side arch st. pos. (outside leg raised). (C).

V. Obstacle relay race.

Lesson 12.

I. Marching, as before. Also Fours R. & L.

II. 1. Arm raising sideways-upward with heel raising and knee bending.
2. Bend walk (a) twist st. backward arching of trunk (C).
3. Alternate foot placing sideways with hands overhead, and forw.-downw. bending of trunk (arms in line with trunk, upper back straight).
4. Bend charge (a) st. trunk twisting to opposite side (C).
5. Neck grasp st. alternate leg flinging forw. (Rh).

6. Hip grasp stride st. side-and-knee bending (C). (Or, side lunge st. side b'd'g of trunk.)
7. Arm bending and stretching, one sidew. the other backw. (on command, and repeated in uneven rhythm).
8. Hip grasp toe-support charge position (try rhythmic repetition, with the position well sustained).
9. Arm flinging sidew. with alt. foot placing forw., and trunk twisting.
10. Neck grasp ½ kneeling backw. leaning of trunk.
11. Hip grasp ½ standing (foot behind) hop and "kick" sidew. with turn, then change feet.
12. Reach st. arm slow parting with backward bending of head (C).

III. Ropes: Climbing on two ropes. Inverted hanging position on two ropes.

or

Boom: Rotary traveling forw. and backw.
Low boom: Forward circle from front rest position.

IV. Saddle boom (or horse with pummels): ½ squat ½ straddle mount, rising dismount. Squat vault. Side vault.

or

Ropes: Swing jump for height.
Also: hop, step and jump, and three standing broad jumps.

V. Run or dance.
Breathing exercise.

Series 3. High School Boys. First Year.

Lesson 1.

I. Alignment on two ranks. Numbering. Open order by forward and backward steps. Facings on two counts.

II.
1. Arm bending with heel raising.
2. Hip grasp stride st. knee bending.
3. Arm flinging sideways, palms up, with backw. bending of head.
4. Hip grasp stride st. forw.-downw. bending of trunk (C).
5. Bend stride st. trunk twisting, alternating with arm stretching sidew.
6. Hip grasp st. leg flinging forward L. & R. (Rh).
7. Arm bending and stretching upw. and downw. (on command and then repeated in even rhythm, at first; later in uneven rhythm).
8. Neck grasp stride st. side bending of trunk (C).
9. Hip grasp st. jumping on toes (Rh). Also running in place.
10. Arm raising sidew. with backward bending of head (C).

III. Horizontal ladder.* Two or more of the following exercises:
Hand traveling forw. and backw., without swing, straight arms, hands on outside.
Hand traveling sidew. L. & R., without swing, straight arms, hands on outside.

* At the first meeting of the class there will probably not be opportunity for much or any apparatus work, as organization, agreements, etc., take up much time. The apparatus work given below, however, is a fair sample of elementary series of exercises.

Hanging alt. knee upw. bending (six to ten pupils at once).
Hanging arm bending, repeated once or twice.

or

High horizontal bar. Three or more of the following:
Swing jump (short underswing), from standing pos. behind bar.
Hanging position: arm bending repeated two or three times.
Jump, start swing, dismount on first backward swing.
Jump to bent arm hanging position, throw head back, straighten arms and draw knees up between arms, insteps touching bar.
Hanging position: change from narrow to wide grasp three times.

IV. Side horse (with pummels). Three or more of the following:
Squat mount, dismount forward.
Straddle mount, dismount forward.
Low side vault L. & R. over ends, one hand on pummel, the other on horse.
Mount to kneeling pos., step up to st. pos., jump down.
Free front rest.
(All the above with running start.)

or

Running high jump from L. & R. foot, without and with 90° turn L. & R.
Running high jump from both feet.

V. Run, march; breathing exercise.

Lesson 4.

I. Front and rear marching. Alignment and open order as before. Facings on one count.

II. 1. Alternate foot placing sidew. with hands on neck, and heel raising.
2. Hip grasp st. heel raising and knee bending.
3. Bend walk (b) st. slow arm stretching upward with backw. bending of head (C).
4. Alternate foot placing sidew. with hands on neck, and forw.-downw. bending of trunk.
5. Arm bending and stretching upw., sidew., and downw. (C, and repeated in uneven rhythm).
6. Hip grasp st. leg flinging sidew. L. & R. (Rh; unexpected changes).
7. Neck grasp walk (b) st. forw. bending of trunk.
8. Cross (a) stride st. trunk twisting, alternating with arm flinging sidew.
9. Oblique charge with hands on hips (or a mimetic exercise, such as catching a low throw to first base).
10. Hip grasp st. jump on toes with foot placing forw.-backw. (Rh).
11. Cross (d) st. arm raising with backw. bending of head (C).

III. Suspended parallel bars. Two or more of the following:
Hand traveling forw. and backw. without swing, straight arms.
Hand traveling sidew. L. & R. without swing, straight arms.

Hanging alternate knee upw. bending. (Several pupils at once.)
Hanging arm bending two or three times. (Several pupils at once.)

or

Ropes:

Climbing pos. (grasp with hands, knees and feet).
Fall hanging pos.: alternate leg raising; arm bending.
Run, jump to bent arm hanging pos., or raise legs; dismount on first backw. swing.

IV. Buck. Two or more of the following:

Straddle vault.
½ squat ½ straddle mount L. & R., rising dismount.
Free front rest.
Low face vault L. & R.
Knee vault.

or

Standing hop, step; step, hop; hop, jump; step, jump; two standing broad jumps.

V. Run, march; breathing exercise.

Lesson 8.

I. Front, flank and rear marching, with changes of direction during march. Alignment and open order as before.

II. 1. Reach st. arm flinging sidew. with heel raising.
2. Hip grasp stride st. alternate knee bending (continuous movement from one side to the other).
3. Neck grasp st. backward bending of head (slow, back arching), alternating with (quick) arm flinging sidew., palms up.
4. Arm bending with alternate foot placing sidew. (wide step), and downw. bending, touching floor (upper back straight).
5. Arm circumduction (quick) with alternate toe touch sidew.
6. Hip grasp st. alternate knee-upw. bending (Rh).
7. Bend stride st. trunk twisting from one side to the other in one continuous movement, alternating with arm stretching upw.
8. Prone falling position and return (C).
9. Cross (c) stride st. side bending of trunk.
10. Crouching start and run in place.
11. Arm raising sidew.-upw. with backw. bending of head.

III. Horizontal ladder. Two or more of the following:

Hand traveling sidew. without swing, straight arms, hands on outside.
Rotary traveling forw. on rungs with swing and ½ turn at each step.
Short jumps forw., hands on outside, straight arms.
Hand traveling forw. on rungs, one at a time, without swing or turn.
Hanging pos.: 2 knee upw. bending; or alt. leg raising forw.
Hanging pos.: arm bending three or four times.

or

High horizontal bar. Three or more of the following:

Jump, start swing, dismount on next forw. swing.
Hanging position: arm bending three or four times.
Jump, start swing, dismount on first backw. swing with 90° turn L. & R.

Jump to bent arm hanging pos., throw head back, straighten arms, raise feet to bar outside hands (knees straight).
Swing jump for distance, running start, from both feet.

IV. Side horse (with pummels):
½ squat ½ straddle mount L. & R., rising dismount.
Squat vault.
Straddle mount, dismount with 90° turn L. & R.
Knee vault.
Low face vault L. & R.

or

Running high jump from L. foot with 90° turn to R.
Running high jump from R. foot with 90° turn to L.
Running hurdle jump from L. & R. foot.

V. Run, march, breathing exercises.

Lesson 12.

I. Marching, etc., as before. More rapid changes.

II. 1. Arm flinging forw. with knee bending, heels off.
2. Cross (c) walk (b) st. slow arm rotation with backw. arching (C).
3. Hip grasp st. alt. leg flinging forw. (Rh).
4. Alternate foot placing forw. with hands on neck, and trunk twisting.
5. Arm bending and stretching upw. and sidew. with heel raising (each time the arms are stretched), uneven rhythm.
6. Forward charge with hands on hips.
7. Neck grasp stride st. side bending of trunk from one side to the other in one continuous movement.
8. Bend ½ hook st. arm stretching sidew. with knee stretching forw. (C).
9. "Foul throw" (basket ball mimetic exercise).
10. Jump on toes with foot placing sidew. and arm flinging sidew.-upw. and crossing of hands and feet on the return.
11. Reach st. slow arm parting, palms up, with backward bending of head.

III. Suspended parallel bars:
Hand traveling sidew. without swing.
Short jumps forw. and backw.
Hand traveling sidew. with swing from shoulder and alternate arm bending.
Hanging position; alternate knee upw. bending and stretching forw.
Hanging position; arm bending four or five times.
Swing jump, standing start.

or

Ropes:
Climbing on one or two ropes, using hands, knees and feet.
Inverted hanging position on two ropes.
Run, start swing and raise legs, dismount on first backw. swing.
Run, start swing and raise legs, dismount on next forw. swing.
Running swing jump without and with 90° turns on landing.

IV. Buck:

Straddle vault with 90° turn L. & R.
½ squat ½ straddle vault L. & R.
Squat mount, rising dismount.
Low side vault L. & R.
Straddle vault for distance on far side.

or

Standing side jump L. & R.; st. backw. jump.
Standing hop, step and jump. Three standing broad jumps.

V. Run, march; breathing exercise.

Series 4. High School Boys. Second Year.

Lesson 1.

I. Alignment on two ranks. Front and rear marching. Open order by forw. and backw. steps. Facings on two counts. (Try one count.)

II. 1. Head movements. Bending and stretching of fingers and wrists in fund., cross (c) and stretch positions, ten counts in each pos.
2. Hip grasp st. alt. heel-and-toe raising (Rh).
3. Arm circumduction on three counts (quick movements) with backw. bending of head.
4. Bend st. stooping, alternating with arm stretching sidew.
5. Neck grasp stride st. trunk twisting.
6. Arm bending and stretching sidew. and backw.
7. Hip grasp st. knee upw. bending L. & R. (Rh).
8. Cross (a) prone st. arm flinging (C).
9. Neck grasp stride st. side bending of trunk.
10. St. forward jump (C).
11. Arm raising sidew. with backw. bending of head (C).

III. Horizontal ladder. Two or more of the following:

Hand traveling forw. and backw., hands outside, straight arms.
Hand traveling sidew., without swing, hands outside, straight arms.
Rotary traveling forw. on rungs with swing and ½ turn.
Short jumps forw., hands outside, straight arms.
Hand traveling forw. on rungs, one at a time, without swing or turn.
Hanging position: alternate side swing from shoulder (with alt. arm bending).
Hanging pos.: arm bending two to four times.

or

High horizontal bar. Three or more of the following:

Jump, start swing, dismount on first backward swing.
Jump to bent arm hanging pos., raise feet to bar between hands, knees bent; or outside hands, knees straight.
Jump, start swing, dismount on next forw. swing.
Hanging position: arm bending two to four times.
Standing swing jump (short underswing) with 90° turn L. & R.

IV. Side horse (with pummels):
Free front rest without or with 90° turn L. & R.
Squat mount, rising dismount.
Knee vault.
Low side vault L. & R. over ends.
Straddle mount, dismount with 90° turn L. & R.
Low face vault L. & R. over ends.
Squat vault.

or

Running high jump with 90° turns L. & R. from each foot.
Running high jump with 90° turns L. & R. from both feet.
Hurdle from L. & R foot.

V. Run, march; breathing exercise.

Lesson 4.

I. Marching. Perfecting of front, rear and flank marching with rapid and unexpected changes of direction. Changing from double to single file and *vice versa*. Open order by side steps.

II. 1. Forward bending and side flinging of arms with alternate foot placing sidew. and heel raising.
2. Hip grasp walk (b) st. heel raising and knee bending.
3. Neck grasp stride st. backw. arching, alternating with quick arm stretching upw.
4. Arm bending with closing feet, and forw.-downw. bending of trunk.
5. ½ hip grasp st. leg flinging L. & R. with opposite arm flinging sidew. (Rh).
6. Bend walk (a) twist st. arm stretching upw.
7. Prone falling position and return.
8. Mimetic exercise: catching a high throw to first base.
9. Oblique charge with hands on neck.
10. Hip grasp st. jump on toes with alt. knee upw. bending.
11. Arm circumduction (2 counts) with backw. bending of head.

III. Suspended parallel bars:
Hand traveling sidew. on one bar, with swing from shoulder and alt. arm bending.
Hand traveling forw. and backw. (one hand on each bar) with bent arms.
Rotary traveling forw. (combined grasp) on one bar, straight arms.
Hand traveling sidew. (ordinary grasp) on one bar, with bent arms.
Standing swing jump, hands outside or inside.
Standing swing jump, catch and dismount.

or

Ropes:
Climbing on one or two ropes, using hands and feet.
Bent arm hanging pos.: alternate knee upw. bending.
Inverted hanging pos. on two ropes: quick backw. ½ circle to floor.
Run, start swing, pull up to bent arm hanging pos. at end of forw. swing.
Running swing jump with 90° turn on landing.

IV. Buck:

½ squat ½ straddle mount L. & R., rising dismount.
Low face vault L. & R.
Squat mount, dismount forw. with side flinging of arms and legs.
Low side vault L. & R.
½ squat ½ straddle vault L. & R.
Straddle vault for distance on far side.
Jump from L. (R.) foot to st. pos. on R. (L.) foot, dismount forw.

or

Standing two hops and jump; two steps and jump; hop, step and jump; three standing broad jumps.
One forw. roll, hands on mat; same with hands on instep.

or

Low Horizontal Bar: (All exercises are done from a standing start.)
Free front rest. Preparation for side vault: swing legs to L. & R.
Preparation for squat vault and straddle vault: insteps to bar inside and outside of hands.
Reverse grasp: circle forw. to sitting pos. on floor, or to fall hanging pos.; swing up to st. pos.
Low side vault L. & R. touching bar with foot and landing with 90° turn.
Short underswing from L. & R. foot.

Lesson 8.

I. Marching, as before, possibly including oblique marching.

II. 1. Arm flinging forw. and sidew. with heel raising and knee bending.
2. Stretch stride st. backw. arching (C).
3. (1) Arm bending; (2) foot placing sidew. with downw. bending, touching floor (straight upper back); (3) trunk raising with arm flinging sidew.: (4) jump to fund. pos.
4. Bend oblique charge st. trunk twisting to same side (C).
5. Arm circumduction with alternate leg raising sidew. (slow movement, on command; or quick movement repeated rhythmically).
6. Alt. foot placing forw. with hands on neck, and forw. bending of trunk.
7. Hip grasp toe st. alt. knee upw. bending (Rh).
8. Mimetic exercise: shot put.
9. Hip grasp side lunge st. side bending of trunk (C).
10. Jump in place with side flinging of arms and 180° turn (C).
11. Bend st. slow arm stretching upw. with backw. bending of head (C).

III. Horizontal ladder:

Short jumps backw., hands outside, straight arms.
Hand traveling backw. on rungs, one at a time, without swing.
Hand traveling forw. on rungs, skipping one, without swing.
Hand traveling sidew., hands outside, with swing from shoulder and alt. arm bending.
Rotary traveling backw. on rungs, with swing and turn.
Hand traveling forw. with bent arms, hands outside.

Hand traveling sidew. on rungs, straight arms.
Standing swing jump.
Standing swing jump, catch and dismount.

or

High horizontal bar:

Jump, start swing, dismount on first backw. swing with 90° turn L. & R.
Hanging pos. with reverse grasp, change to ordinary grasp, twice.
Jump, start swing, dismount on next forw. swing with 90° turn L. & R.
Jump, pass feet between hands to inverted hanging pos., return in reverse order.
Hanging pos. with reverse grasp, start swing, dismount on first backw. swing.
Jump to bent arm pos., raise legs quickly, hook one knee over bar and swing other leg backw.; dismount on next backw. swing. Or mount.
Jump from behind or directly under bar, backw. circle to front rest.
Swing jump for height and distance, running start.

IV. Side horse:

Straddle mount, dismount with 180° turn L. & R.
½ squat ½ straddle vault L. & R. over ends of horse.
Squat vault with 90° turn.
Low side vault L. & R. with 90° turn R. & L. respectively.
Mount to kneeling pos. spring up to st. pos., dismount forw.
Back vault L. & R. over ends.
Face vault L. & R.
Straddle vault.

or

Running high jump from L. & R. foot with 180° turn to side of springing foot (leading up to regular competitive style of running high jump).
Running oblique jump (springing from one foot, landing on the other).
Standing high jump—forw. and sidew.
Hurdle. Pike drive (without and with spring board).

V. Run, march; breathing exercise.

Lesson 12.

I. Marching, as before.

II. 1. Arm bending and stretching upw. with alt. foot placing sidew. and heel raising.
2. Side lunge with hands on hips, and alternate knee bending.
3. Alt. foot placing forw. with hands on neck, and backw. arching of trunk.
4. Bend stride st. forw.-downw. bending of trunk, alternating with arm stretching upw. with (quick) knee bending.
5. Forw. bending of arms with alt. foot placing obliquely outw., and trunk twisting.
6. Hip grasp toe-support charge pos.
7. Alt. leg flinging sidew. with opposite arm flinging sidew.-upw. (Rh).

8. Prone falling foot placing forw. and backw. once, and return (six counts).
9. Mimetic exercise: discus throw; or catching wide throw to first base.
10. Hip grasp st. hop twice on L. foot and swing R. foot backw. and forw., then change (Rh).
11. Bend st. slow arm stretching sidew., palms up, with backw. bending of head (C).

III. Suspended parallel bars:

Hand traveling backw. (one hand on each bar) with bent arms.
Short jumps forw. (one hand on each bar) with bent arms.
Rotary traveling backw. (combined grasp) on one bar, straight arms.
Hand traveling sidew. (on one bar), bent arms.
Jump, start swing, dismount on next backw. swing; hands outside or inside bars. (Try mounting to upper arm hang.)
Swing jump, catch and dismount with 90° turns.
At ends of bars: jump, pull up, raise legs to inverted hanging pos. Return in reverse order, or by quick backw. ½ circle (body straight).

or

Ropes:

Horizontal climbing from rope to rope.
Prone hanging pos.: arm bending; change to fall hanging pos.
Inverted climbing pos. on one rope.
Quick backw. circle between two ropes.
Running swing jump on one rope.

IV. Buck:

Straddle vault with 90° or 180° turns.
Knee vault. Squat vault.
Low side vault L. & R. with 90° turn R. & L. respectively.
½ squat ½ straddle vault L. & R., each with 90° turn each way.
Jump from L. & R. foot to standing pos. on both feet. Rising dismount, touching toes with hands before landing.
Back vault L. & R., without and with 90° inside turn.
Straddle vault for height.

or

Running hop, step; step, hop; hop, jump; step, jump; hop, step and jump.
Elementary tumbling: forw. and backw. roll; head stand and forw. roll; hand stand (with assistance); cartwheel; hand-and-head spring; dive; handspring.

or

Low horizontal bar:

Free front rest with 90° turns on landing.
Low side vault L. & R.
Front rest, dismount backw. (without and with 90° turns).
Squat mount, dismount forw.
Low face vault L. & R. (combined grasp).
Front rest: slow forward circle (bending at hips) to fall hanging pos., swing up to st. pos.
Back vault L. & R.

Mount to back rest, turning L. & R., dismount forw., or roll over backw. (backw. circle) to standing pos. on near side.
Backw. circle to front rest, dismount backw.
Short underswing, from both feet, without and with a jump.

V. Run, march, breathing exercise.

Series 5. College Women. First Year.

Lesson 1.

I. Alignment on two ranks. Fundamental standing position. Relaxed position. Numbering. Open ranks by two forward and backward steps, each step separately on command; then numbers One one step forward, numbers Two one step backward. Facing L. and R. in two movements, each on separate command.

II.
1. Arm flinging sidewards with heel raising (Rh).
2. Hip grasp stride st. knee bending (C).
3. Backward bending at head (C).
4. Arm bending and stretching downward. (On command a few times, then repeated in even rhythm.)
5. Stride st. stooping with trunk twisting, touching floor with one hand and raising other arm. (Rhythmic; more or less indefinite.)
6. Cross (a) st. arm flinging sideways (C).
7. Hip grasp st. knee upward bending L. and R. (Rh).
8. Hip grasp stride st. side bending of trunk (C).
9. March and run in place.
10. Arm raising sideways with backward bending of head (C).

III. Flank march. Run. Repeat breathing exercise.

Lesson 4.

I. Front and rear marching; to the rear march and halt on 3 counts, stopping on first. Open order by forward and backward steps, on one command. Facings on 2 counts, complete on one command.

II.
1. Arm bending with alternate foot placing forward.
2. Hip grasp stride st. alternate knee bending (2 counts on each side).
3. Cross (a) st. backward bending of head (C).
4. Bend st. stooping and return.
5. Hip grasp st. leg flinging sideways L. and R. (change from one side to the other without stopping).
6. Arm bending and stretching sideways and downward (uneven rhythm).
7. Neck grasp stride st. trunk twisting (C).
8. Cross (c) ½ st. position (leg forward) (C).
9. Bend stride st. side bending of trunk. (C; try repeating in slow rhythm, holding each position an instant.)
10. Hip grasp st. jump on toes with foot placing forward-backw. (Rh).
11. Arm rotation with backward bending of head (C).

III. Climbing on bar stalls or window ladders (using hands and feet). Grasp (high) ½ st. arm stretching with knee bending.

IV. Running high jump from both feet.
Standing hop; st. step (leap); st. broad jump.

V. Run, march; breathing exercise. Or folk dance.

Lesson 8.

I. Front, rear and flank marching with moderately rapid changes of direction. Halts with facings. Open order by forward and backward steps, followed by facings, on one command.

II. 1. Cross (a) st. arm flinging sideways with heel raising.
2. Hip grasp st. heel raising and knee bending.
3. Bend walk (b) st. slow arm stretching upward with backward bending of head (C).
4. Alternate foot placing sideways with hands on neck, and forward-downward bending of trunk.
5. Bend stride st. alternate trunk twisting from one side to the other in one movement, alternating with arm stretching sideways.
6. Hip grasp ½ hook st. change feet in one movement, with a jump (C).
7. Forward charge with hands on neck.
8. Cross (c) stride st. side bending of trunk (C).
9. Bend st. stooping, alternating with arm stretching upward.
10. Hip grasp st. cut step (rocking step) (Rh).
11. Reach st. arm parting, palms up, with backward bending of head (C).

III. Suspension exercises on boom, horizontal ladder, window ladders, rope ladders, traveling rings, vertical and inclined ropes, etc.*

IV. Running and standing high jump, standing broad jumps, running swing jumps with ropes or rings; vaulting on box, buck, horse, saddle boom, double boom.

V. Run, march; breathing exercise.

Lesson 12.

I. Marching, as before. More rapid changes. Change from double to single file.

II. 1. Arm bending with alternate foot placing obliquely outward, and heel raising.
2. Cross (a) st. arm flinging sideways with knee bending (heels off).
3. Neck grasp walk (b) st. backward arching of trunk (C).
4. Bend stride st. forward-downward bending of trunk, alternating with arm stretching diagonally upward.
5. Hip grasp st. alternate leg flinging sideways (Rh).
6. Arm bending and stretching, one forward, the other sideways.
7. Hip grasp ½ st. (leg forward) knee bending (C).
8. Neck grasp oblique charge st. trunk twisting to same side (C).
9. Prone falling position and return.
10. Jump forward with 3 (running) start steps.
11. Arm circumduction with backward bending of head (C).

* The apparatus work is similar to that given to high school girls. The progression is, if anything, slower, unless careful grading in squads of varying ability is feasible.

III. and IV. Apparatus work.

V. Run, toe march, breathing exercise; or simple dance.

Series 6. College Women. Second Year.

Lesson 1.

I. Front and rear marching. Open order by forward and backward steps.

II. 1. Arm flinging sideways with alternate foot placing forward.
2. Stride st. arm bending with knee bending.
3. Neck grasp stride st. backward bending of head with chest expansion (C).
4. Hip grasp st. leg flinging forward L. and R. (Rh).
5. Bend stride st. trunk twisting (C).
6. Arm bending and stretching sideways and downward.
7. Hip grasp walk (b) toe st. head twisting (C).
8. Bend st. stooping, alternating with arm stretching downward (Rh).
9. Hip grasp stride st. side bending of trunk (C).
10. Jump on toes with arm flinging and foot placing sideways (Rh).
11. Arm rotation with backward bending of head.

III. High boom: mount to hanging position and dismount. Hanging alternate knee upward bending, or
Low boom: fall hanging position and return. Fall hanging alternate leg raising, or
Window ladder: oblique climbing.

IV. Running high jump from L. and R. foot and from both feet, or Standing hop; st. step (leap); standing broad jump.

V. Short run, march and breathing exercise.

Lesson 4.

I. Front, flank and rear marching; L. by file, R. by twos march.

II. 1. Arm bending with heel raising.
2. Alternate side lunge with hands on hips.
3. Arm circumduction with backward bending of head (slow movement on command, or quick rhythmic repetition).
4. Alternate foot placing sideways with hands on hips, and forward-downward bending of trunk.
5. Neck grasp st. side bending of trunk (C).
6. Arm bending and stretching, one sideways, the other downward.
7. Cross (d) ½ st. (leg forward) arm raising (C).
8. Arm bending with alternate foot placing forward, and trunk twisting.
9. Oblique charge with hands on neck.
10. Jump in place with sideways flinging of arms and 90° turn (C).
11. Reach st. arm parting, palms up, with backward bending of head (C).

III. and IV. Suspension apparatus exercises. Jumping and vaulting similar to the apparatus work given for second year high school girls.

V. Run, march, breathing exercise; or dance.

Lesson 8.

I. Marching with doubling, starting from one rank. Open order by side steps.

II. 1. Reach st. arm flinging sideways (palms down) with heel raising.
2. Alternate foot placing obliquely outward with hands on hips, and knee bending.
3. Cross (e) st. backward arching of trunk (C).
4. Bend stride st. downward bending, touching floor (straight upper back), alternating with arm stretching sideways.
5. Oblique charge with hands on neck, and trunk twisting to opposite side (C).
6. Arm bending and stretching backward, forward and upward.
7. Hip grasp ½ st. (leg forward) change feet on one count, with a jump (C).
8. Forward bending of arms with alternate foot placing sideways, and side bending of trunk.
9. Hip grasp toe-support charge position.
10. Jump on toes with arm flinging and foot placing sideways and with crossing of hands and feet on return.
11. Cross (d) st. arm raising with backward bending of head (C).

III. and IV. Suspension exercises. Jumping and vaulting.

V. Run, etc.

Lesson 12.

I. Marching: fours R. and L., starting from one rank.

II. 1. Forward bending and side flinging of arms with alternate foot placing forward and heel raising.
2. Hip grasp st. heel raising and deep knee bending.
3. Arm circumduction with trunk twisting and backward bending of head (C).
4. (1) Arm bending; (2) foot placing sideways with downward bending, touching floor (straight upper back); (3) trunk raising with arm bending; (4) jump to position with arm stretching sideways. Repetitions start from the cross (c) st. position.
5. Neck grasp stride st. trunk twisting all the way from one side to the other in one (quick) movement, alternating with arm stretching upward.
6. Bend st. oblique charge with stretching of one arm upward, the other downward. Return by follow step; zigzag advance.
7. Hip grasp ½ hook st. knee stretching forward (C). Or the exercise may be done as a rhythmic movement, thus: hip grasp st. alternate knee upward bending and stretching forward. Movements quick, rhythm slow; stop the class in the ½ hook position unexpectedly.
8. Cross (e) close st. forward bending of trunk.
9. Side lunge with hands on hips, and side bending of trunk.
10. Jump on toes with alternate knee upward bending and arm flinging sideways (Rh).
11. Bend st. arm stretching upward with backward bending of head (C).

III. and IV. Apparatus work.

V. Run, etc.

Series 7. College Men. First Year.

The following is a sample series of exercises of a more or less indefinite character which may be used for the first few lessons, if the conditions are such as to make it inadvisable to begin at once with the more definite style of work. The change to the latter may then be gradual, by substituting each time a few of the exercises from the first and second lessons of the definite style. All the exercises in this preliminary series (except the breathing exercise) are started and repeated rhythmically.

1. Flexion and extension of fingers and wrists, in the various arm positions, ten counts in each position.
2. Hip grasp st. alternate heel and toe raising.
3. Hand clapping overhead with knee bending (heels off).
4. Arm flinging forward, sideways and downward with backward bending of head.
5. Bend stride st. stooping with trunk twisting, touching floor with one hand while the other arm is stretched vertically upward.
6. Knee-upward bending L. and R., grasping knee and pulling it toward chest (keeping head high and trunk erect).
7. Stride st. alternate side bending of trunk with swinging of the arm on the opposite side up overhead.
8. Arm bending and stretching upward, sideways and downward in fairly quick, even rhythm.
9. Bend stride st. "chopping" movement.
10. Arm circumduction with alternate toe-touch sideways with bending of knee of supporting leg.
11. Bend stride st. downward bending touching floor, alternating with arm stretching sideways.
12. Hip grasp st. leg flinging sideways L. and R.
13. Prone falling position and return.
14. Hip grasp st. jump on toes in various ways. Run in place.
15. Arm raising sideways with backward bending of head (C).

Lesson 1.

I. Formation and alignment on two ranks. Numbering. Open order by forward and backward steps. Facing on two counts, stopping on first.

II.
1. Arm flinging sideways with heel raising.
2. Hip grasp stride st. knee bending.
3. Arm circumduction with backward bending of head (C).
4. Hip grasp st. knee-upward bending L. and R.
5. Arm bending and stretching downward (first on command and then repeated in even, slow rhythm; quick movements).
6. Hip grasp stride st. side bending of trunk (C).
7. Arm flinging sideways with alternate toe-touch forward and bending of knee of supporting leg (Rh).
8. Hip grasp st. forward bending of trunk (C).
9. Bend st. arm stretching sideways with alternate foot placing sideways, or forward.
10. Bend stride st. trunk twisting (C).
11. Jump in place with side-flinging of arms (C).
12. Hip grasp st. jump on toes (Rh).
13. Arm rotation with backward bending of head (C).

III. Elementary exercises on horizontal ladder, suspended parallel bars, high and low horizontal bar and vertical ropes.*

IV. Elementary exercises on buck, horse and parallel bars; running and standing high jumps; hop, step and jump, standing broad jumps and elementary tumbling.

V. Short run.

Lesson 4.

I. Alignment. Open order by forward and backward steps. Facings on one count.

II.
1. Head bending sideways; backward bending of head (C).
2. Alternate foot placing forward with hands on hips, and heel raising.
3. Cross (a) stride st. arm flinging sideways with knee bending.
4. Alternate foot placing sideways with hands on neck, and backward arching of trunk.
5. Bend st. (slow) forward bending of trunk, alternating with (quick) arm stretching upward.
6. Hip grasp st. alternate leg flinging sideways.
7. Arm bending and stretching backward and sideways.
8. Hip grasp walk (a) st. heel raising and knee bending.
9. Alternate foot placing forward with hands on neck, and trunk twisting.
10. Reach st. arm flinging sideways with alternate toe-touching forward.
11. Bend stride st. side bending of trunk, alternating with arm stretching diagonally upward (with heel raising).
12. Arm flinging sideways with alternate foot placing sideways (wide step), then downward bending of trunk, touching floor (upper back straight).
13. Oblique charge with hands on hips.
14. Prone falling position.
15. Hip grasp st. jump on toes with foot placing forward and backward, passing through toe st. position each time (Rh).
16. Bend st. arm stretching upward with backward bending of head (C).

III. Suspension apparatus exercises.

IV. Jumping or vaulting.

V. Run.

Lesson 8.

I. Alignment and open order by side steps. Marching forward and backward.

* As a considerable proportion of college students have not had previous training, the apparatus work will be similar to that given to high school boys. With proper grading of squads and well-trained leaders, however, the progression will be more rapid. During the freshman year the squads of average ability might progress as far as second year high school boys, the squads of greater ability somewhat beyond this point. In the sophomore year the apparatus work covered in the second half of the freshman year should be reviewed, at least the more representative exercises. The progression is then carried as far as possible.
For progressive lists of apparatus exercises see appendix.

II. 1. Reach st. arm flinging sideways with heel raising.
2. Hip grasp stride st. alternate knee bending (one count on each side).
3. Bend st. backward arching of trunk, alternating with arm stretching upward.
4. Hip grasp toe st. alternate knee upward bending (Rh).
5. Cross (a) stride st. trunk twisting from one side to the other in one movement, alternating with arm flinging sideways.
6. Neck grasp toe-support charge position.
7. Arm bending and stretching, one upward and the other forward.
8. Hip grasp stride st. side-and-knee bending.
9. (1) Arm bending; (2) foot placing sideways with downward bending, touching floor; (3) trunk raising with arm flinging forward-sideways; (4) jump to fund. position.
10. Oblique charge with hands on neck, and trunk twisting to opposite side.
11. Arm circumduction (quick) with alternate toe-touch sideways.
12. Hip grasp st. alternate leg flinging forward-sideways (leg circumduction) (Rh).
13. Prone falling position, arm bending once, and return to st. position (six counts).
14. Hip grasp st. hop twice on one foot and swing the other backward and forward, then change.
15. Bend st. slow arm stretching sideways, palms up, with backward bending of head (C).

III. Suspension apparatus work.

IV. Jumping, vaulting or tumbling.

V. Run.

Lesson 12.

I. Front and rear marching. Open order as before.

II. 1. Arm bending and stretching upward with alternate foot placing sideways and heel raising.
2. Hip grasp st. heel raising and deep knee bending.
3. Alternate foot placing forward with hands on neck, and backward arching of trunk.
4. Stretch stride st. forward-downward bending of trunk, alternating with arm parting with knee bending.
5. Arm bending with alternate foot placing outward, then arm stretching sideways with trunk twisting (to the same side as foot placing).
6. Hip grasp st. alternate knee-upward bending and stretching forward (slow rhythm, quick movements. Stop unexpectedly in any position).
7. Alternate leg flinging sideways with opposite arm flinging sideways-upwards.
8. Arm bending with alternate foot placing sideways, (slow) forward bending of trunk, then (quick) arm stretching diagonally upward. Return in reverse order (six counts).
9. Arm flinging sideways with side lunge, then side bending of trunk, touching floor with one hand, the other arm vertical.
10. (1) Arm bending; (2) foot placing sideways with downward bending, touching floor; (3) trunk raising with arm flinging forward-upward; (4) jump to fund. position with arm flinging sideways-downward.

11. ½ hip grasp side falling position. Try leg raising.
12. Arm flinging sideways-upward with alternate leg flinging forward (Rh).
13. Forward charge with hands on neck, and forward bending of trunk.
14. Hip grasp ½ st. (foot behind) hop and "kick" sideways with turn, then change feet and repeat (Rh).
15. Bend st. slow arm stretching upward with backward bending of head (C).

III. Suspension apparatus work.

IV. Jumping, vaulting or tumbling.

V. Run.

Series 8. College Men. Second Year.

Lesson 1.

I. Formation on two ranks; open order by forward and backward steps. Marching forward.

II. 1. Arm bending with heel raising.
2. Alternate foot placing sideways with hands on hips, and knee bending.
3. Arm circumduction (quick), on three counts, with backward bending of head.
4. Bend stride st. forward-downward bending of trunk, alternating with arm stretching sideways.
5. Neck grasp stride st. alternate trunk twisting.
6. Arm bending and stretching sideways and downward.
7. Hip grasp st. knee-upward bending L. and R.
8. Arm flinging forward-upward with alternate toe-touch sideways.
9. Hip grasp stride st. side bending of trunk.
10. Bend st. stooping, alternating with arm stretching upward.
11. Hip grasp st. leg flinging diagonally forward L. and R.
12. Prone falling position and return.
13. Hip grasp st. jump on toes—quick and slow rhythm (Rh).
14. Arm raising sideways with backward bending of head (C).

III. Suspension apparatus exercises.

IV. Jumping or vaulting.

V. Run.

Lesson 4.

I. Front, flank and rear marching. Open order by side steps.

II. 1. Flexion and extension of fingers and wrists in all positions, ten counts in each.
2. Hip grasp st. alternate heel-and-toe raising.
3. Arm flinging forward and sideways with alternate foot placing sideways and knee bending.
4. Alternate foot placing forward with hands on neck, and backward arching of trunk.
5. Bending stride st. forward-downward bending of trunk, alternating with arm stretching upward.

6. Close st. arm flinging forward with knee bending (knees together, heels off).
7. ½ hip grasp st. leg flinging sideways L. and R. with opposite arm flinging sideways-upward.
8. ½ sideways bending of arms with alternate foot placing sideways, and forward bending of trunk.
9. Arm bending with oblique charge, and trunk twisting to opposite side.
10. Forward bending and side flinging of arms with alternate knee upward bending and stretching forward.
11. Alternate foot placing forward with hands on neck, and side bending of trunk.
12. Hip grasp toe-support charge position.
13. Arm bending and stretching, one backward, the other sideways; both upward, sideways and downward, with heel raising on even count.
14. ½ hip grasp side falling position, about facing, and return to fund. st. position (eight count movement).
15. Jump on toes with arm flinging and alternate leg flinging sideways, crossing hands and feet at each jump (Rh).
16. Cross (d) st. arm raising with backward bending of head (C).

III. and IV. Apparatus work.

V. Run.

Lesson 8.

(Dumb-bells.)

I. Marching: fours R. and L. from single rank formation. Finish by marching around room, single file, taking dumb-bells, then, when marching around one end of room, forming open column of fours, halting in formation properly spaced for the exercises.

II.
1. Bend st. arm stretching upward with heel raising.
2. Arm flinging sideways with alternate foot placing forward, then slow arm rotation with backward bending of head.
3. Bend st. stooping (strike floor), alternating with arm stretching sideways.
4. Alternate leg flinging sideways with opposite arm flinging sideways-upward.
5. Arm bending with alternate foot placing obliquely outward, then arm stretching forward with trunk twisting (to same side as foot placing).
6. (1) Arm bending; (2) foot placing sideways with downward bending, striking floor; (3) trunk raising with arm bending; (4) jump to position with arm stretching upward. Repetitions start from stretch st. position.
7. Arm flinging sideways with side lunge, then side bending of trunk, striking floor (other arm vertically overhead).
8. Bend st. alternate leg flinging forward (or alternate knee upward bending) with striking of bells behind knee of moving leg. Uneven rhythm.
9. Bend st. oblique charge with twisting of trunk to opposite side and of head to same side (as charge), and with stretching of arm on same side upward, the other downward.

10. Prone falling position: foot placing forward and backward once, then arm bending once and return to fund. st. position (eight counts).
11. Jump on toes with foot placing sideways and arm flinging sideways-upward, striking overhead and behind back.
12. Arm circumduction with backward bending of head.

III. and IV. Apparatus work.

V. Run.

Lesson 12.

(Bar bells.)

I. Marching and open order as before.

II. 1. Arm bending and stretching upward with heel raising and knee bending.
2. Arm circumduction (to position with bar behind back) with backward bending of head and simultaneous alternate foot placing forward.
3. Bend stride st. (bar behind neck) forward-downward bending of trunk, alternating with arm stretching upward.
4. Arm flinging sideways-upward (one arm overhead, the other with forearm across chest and hand in arm-pit) with opposite leg flinging sideways.
5. Arm flinging upward-sideways (to position with bar behind shoulders) with alternate foot placing obliquely outward, then trunk twisting (to same side as foot placing).
6. Arm flinging sideways (one arm in cross (c), the other in cross (a) position, bar bell resting on elbow and forearm of bent arm) with alternate toe-touch sideways on opposite side, knee bending on same side (trunk erect and vertical).
7. Cross (c) st. (bar behind shoulders) alternate leg flinging forward (or arm flinging forward-upward with alternate leg flinging forward).
8. Arm flinging sideways with opposite foot placing sideways, then side bending of trunk (to same side as foot placing).
9. Arm circumduction with toe-support charge.
10. Arm bending and stretching upward with alternate knee upward bending and stretching forward.
11. Side lunge with opposite arm flinging sideways-upward, then side bending of trunk (to same side as lunge).
12. (1) Arm bending; (2) foot placing sideways with downward bending striking floor; (3) trunk raising with arms overhead; (4) jump to fund. position.
13. Oblique charge with arm on same side overhead, bar in front or behind.
14. Jump on toes with alternate leg flinging sideways and opposite arm flinging sideways (or sideways-upward).
15. Arm raising forward-upward with backward bending of head.

III. and IV. Apparatus work.

V. Run.

V. APPENDIX.

The following lists of free-standing and apparatus exercises are arranged in approximately progressive order. They include the more common and representative types and combinations, but are not in any sense exhaustive.

1. Free-Standing Exercises.

Foot Placings; Heel Raising; Toe Raising; Closing of Feet.

Alt. foot placing sidew. with (placing of) hands on hips.
Hip grasp stride st. heel raising.
Hip grasp st. alt. toe raising.
Alt. foot placing outw. with hands on hips.
Alt. foot placing forw. with hands on hips.
Hip grasp st. heel raising.
Hip grasp st. close and open feet.
Hip grasp stride st. alt. heel raising (2 or 1 count each side).
Arm raising sidew. with heel raising.
Alt. foot placing sidew. with hands on neck.
Arm bending with heel raising.
Alt. foot placing sidew. with hands on hips, and heel raising.
Arm bending with alt. foot placing outw.
Hip grasp close st. heel raising.
Forw. bending of arms with alt. foot placing sidew.
Neck grasp st. alt. toe raising.
Alt. foot placing outw. with hands on hips, and heel raising.
Neck grasp stride st. alt. heel raising (1 count each side).
Arm bending with alt. foot placing forw.
Alt. foot placing sidew. with hands on neck, and heel raising.
Forw. bending of arms with alt. foot placing outw.
Alt. foot placing forw. with hands on hips, and heel raising.
Arm raising forw. with heel raising.
Hip grasp st. alt. heel-and-toe raising.
Alt. foot placing backw.-outw. with hands on hips.
Forw. bending of arms with heel raising.
Arm flinging sidew. with alt. foot placing forw.
Bend st. arm stretching downw. with heel raising.
Alt. foot placing outw. with hands on neck, and heel raising.
Arm flinging forw. with alt. foot placing sidew.
Closing of feet with hands on hips, and heel raising.
Bend st. arm stretching sidew. with heel raising.
Alt. foot placing forw. with hands on neck, and heel raising.
Reach stride st. arm flinging sidew. with heel raising.
Walk (b) st. arm raising sidew. with heel raising.
Cross (a) st. arm flinging sidew. with heel raising.
½ sidew. bending of arms with heel raising.
Bend st. arm stretching upw. with heel raising.
Neck grasp st. alt. heel-and-toe raising.
Arm bending and stretching sidew. with alt. foot placing sidew. and heel raising.
½ sidew. bending of arms with alt. foot placing sidew. and heel raising.

Cross (d) st. arm raising (or flinging upw.) with heel raising.
Closing of feet with hands on neck, and heel raising.
Forw. bending of arms and arm flinging sidew. with alt. foot placing sidew. and heel raising.
Reach st. arm flinging upw. with heel raising.
Arm flinging sidew. and arm rot. with alt. foot placing sidew. and heel raising.
Cross (e) st. arm stretching sidew. with heel raising.
Arm flinging forw. and sidew. with alt. foot placing sidew. and heel raising.
Cross (a) walk (b) st. arm flinging sidew. with heel raising.
Arm bending and stretching forw. with alt. foot placing sidew. and heel raising.
Cross (e) st. arm stretching upw. with heel raising.
Arm raising sidew. and upw. with alt. foot placing sidew. and heel raising.
Bend walk (b) st. arm stretching sidew. with heel raising.
Forw. bending and side flinging of arms with alt. foot placing forw. and heel raising.
½ sidew. bending of arms and arm stretching sidew. with alt. foot placing sidew. and heel raising.
Arm bending and stretching sidew with closing of feet and heel raising.
Arm circumduction (4 counts) with alt. foot placing sidew. and heel raising.
Arm bending and stretching upw. with alt. foot placing sidew. and heel raising.
Cross (d) walk (b) st. arm flinging upw. with heel raising
Arm bending and stretching sidew. with alt. foot placing forw. and heel raising.
½ sidew. bending of arms and arm stretching upw. with alt foot placing sidew. and heel raising.
Arm flinging forw. and sidew. with alt. foot placing forw. and heel raising.
Bend st. arm stretching forw. and arm flinging sidew with alt. foot placing sidew. and heel raising.
Arm bending and stretching upw. with alt. foot placing forw and heel raising.
Forw. bending and side flinging of arms, with closing of feet and heel raising.
½ sidew. bending of arms and arm stretching sidew with alt. foot placing forw. and heel raising.
Reach st. arm flinging sidew. and upw. with alt foot placing sidew and heel raising.
Bend st. arm stretching upw. and arm parting with alt. foot placing sidew. and heel raising.
Arm flinging sidew. and upw. with alt. foot placing forw and heel raising.
Arm bending and stretching upw. with closing of feet and heel raising.
Cross (a) st. arm flinging sidew. and upw. with alt. foot placing sidew. and heel raising.
Arm raising sidew. and upw. with closing of feet and heel raising.
½ sidew. bending of arms and arm stretching upw. with alt. foot placing forw. and heel raising.
Arm flinging sidew. and arm rotation with alt. foot placing forw. and heel raising.
Arm circumduction (4 counts) with alt. foot placing forw. and heel raising.
½ sidew. bending of arms and arm rotation with alt. foot placing sidew. and heel raising.

with arm flinging upw. (or sidew.) with heel raising.

Bend st. arm stretching sidew. (upw., or forw.) with alt. foot placing forw. (outw. or sidew.), alternating with arm stretching upw. (sidew. or forw.) with heel raising.

Knee Bending and Alternate Knee Bending; Foot Placings; Side Lunge; Arm Movements and Combinations.

Hip grasp stride st. knee bending.
Stride st. arm raising sidew. with knee bending (slow or quick).
Neck grasp stride st. knee bending.
Alt. foot placing sidew. with hands on hips, and knee bending.
Hip grasp st. knee bending with simultaneous heel raising (2 count movement).
Stride st. arm bending with (quick) knee bending.
Arm bending with alt. foot placing sidew., and knee bending.
Hip grasp stride st. alt. knee bending (2 counts each side).
Forw. bending of arms with alt. foot placing sidew., and knee bending.
Arm flinging forw. (or sidew.) with (quick) knee bending, heels off (2 count movement).
Alt. foot placing sidew. with hands on neck, and knee bending.
Hip grasp stride st. alt. knee bending from one side to the other in one movement.
Bend stride st. arm stretching sidew. with (quick) knee bending.
Hip grasp st. heel raising and knee bending (4 count movement).
Cross (a) stride st. arm flinging sidew. with (quick) knee bending.
Alt. foot placing outw. with hands on hips, and knee bending.
Reach stride st. arm parting with knee bending (slow or quick).
Arm bending and stretching sidew. with alt. foot placing sidew. and knee bending.
Bend stride st. arm stretching forw. with (quick) knee bending.
Neck grasp stride st. alt. knee bending (from one side to the other in one movement).
Cross (d) stride st. arm raising with knee bending (slow or quick).
Alt. side lunge with hands on hips.
Hip grasp stride st. heel raising and knee bending (4 count movement).
Forw. bending and side-flinging of arms with alt. foot placing sidew. and knee bending.
Toe st. arm raising sidew. with knee bending.
Reach stride st. arm raising with knee bending (slow or quick).
Arm bending with alt. side lunge.
Close st. arm flinging forw. with knee bending, heels off (knees together).
Alt. foot placing outw. with hands on neck, and knee bending.
Alt. side lunge with hands on neck.
Bend stride st. arm stretching upw. with (quick) knee bending.
Neck grasp st. heel raising and knee bending (4 count movement).
½ sidew. bending of arms with alt. foot placing sidew., and knee bending.

Stretch stride st. arm parting with knee bending (slow).
Hip grasp st. heel raising and deep knee bending (4 count movement).
Arm bending and stretching forw. with closing of feet and knee bending (heels off, knees together).
Arm flinging sidew. with alt. side lunge.
Cross (e) stride st. arm stretching sidew. (or upw.) with knee bending
Arm flinging sidew.-upw. with knee bending, heels off.
Bend toe st. arm stretching sidew. with (quick) knee bending.
Arm flinging forw. and sidew. with alt. foot placing sidew. and knee bending.
Hip grasp walk (a) st. heel raising and knee bending (4 count movement)
Alt. side lunge with hands on hips, and alt. knee bending.
Arm bending and stretching upw. with alt. foot placing sidew. and knee bending.
Hip grasp st. deep knee bending, heels off (2 count movement).
Arm raising sidew. and upw. with alt. foot placing sidew. and knee bending.
Neck grasp st. heel raising and deep knee bending (4 count movement).
Hip grasp walk (b) st. heel raising and knee bending (4 count movement).
Alt. side lunge with hands on neck, and alt. knee bending.
Arm circumduction (4 counts) with alt. foot placing sidew. and (quick) knee bending.
Cross (a) toe st. arm flinging sidew. with (quick) knee bending.
Alt. foot placing outw. with hands on hips, heel raising and knee bending (6 count movement).
½ sidew. bending of arms and arm stretching sidew. (or upw.) with alt. foot placing sidew. and knee bending.
Reach (stride) toe st. arm flinging sidew. with knee bending.
Close st. arm flinging sidew. with knee bending, heels off (knees together).
Bend toe st. arm stretching upw. with knee bending.
Stretch st. arm parting with knee bending, heels off.
Alt. foot placing forw. with hands on hips, heel raising and knee bending (6 count movement).
Cross (d) toe st. arm raising (slow or quick) with knee bending.
Arm flinging sidew., palms up, with alt. side lunge, and arm raising.
Bend st. arm stretching forw. and arm parting with alt. foot placing sidew. and knee bending.
Arm flinging sidew.-upw. with deep knee bending, heels off (2 count movement).
Arm bending and stretching sidew. with heel raising and knee bending.
Alt. foot placing outw. with hands on neck, heel raising and knee bending (6 counts).
Arm flinging forw. and sidew. with heel raising and knee bending.
Bend st. arm stretching sidew. (palms up) with alt. foot placing sidew., then arm raising with knee bending.
Arm bending and stretching sidew. with closing of feet and knee bending (heels off, knees together).
Forw. bending and side flinging of arms with heel raising and knee bending.
Arm flinging forw. with alt. side lunge, then arm parting with alt. knee bending.
Bend st. arm stretching upw. with alt. foot placing sidew., then arm parting with knee bending.
Arm raising sidew.-upw. with heel raising and knee bending.
Bend stride st. arm stretching sidew., palms up, with heel raising, then arm raising with knee bending.

Arm bending and stretching upw. with heel raising and knee bending.
Reach toe st. arm parting with deep knee bending.
Alt. foot placing forw. with hands on neck, heel raising and knee bending (6 counts).
Arm circumduction (4 counts) with heel raising and knee bending.
Cross (d) toe st. arm raising with deep knee bending.
Arm bending and stretching forw. with alt. foot placing sidew. and heel raising, then arm parting (quick or slow) with knee bending (6 count movement).
Bend st. arm stretching upw. and arm parting with heel raising and knee bending.
Arm flinging forw.-upw. with alt. side lunge, then arm parting with alt. knee bending.
Arm bending and stretching upw. with closing of feet and knee bending (heels off).
Arm bending and stretching upw. with alt. foot placing sidew. and heel raising, then arm parting with knee bending (6 count movement).
Arm flinging forw.-upw. and arm parting with heel raising and knee bending.
Arm bending and stretching sidew. (palms up) with alt. foot placing forw. and heel raising, then arm raising with knee bending (6 count movement).
Alt. side lunge with arm flinging upw. on same side, sidew. (palm up) on opposite side, then alt. knee bending with change of arms.

Backward Moving of Head and Arching of Trunk; Foot Placings; Toe Touches and Arm Movements.

Backward bending of head with chest expansion.
Arm raising sidew. with backw. bending of head.
Bend st. (slow) arm stretching sidew. with backw. bending of head.
Hip grasp stride st. backw. bending of head with chest expansion (= backward arching).
Arm raising sidew., palms up, with backw. bending of head (slow, on command; or quick, rhythmic movement).
Bend stride st. backw. bending of head with chest expansion (= backw. arching).
Reach st. (slow) arm parting, palms up, with backw. bending of head (on command; or quick, rhythmic movement).
Neck grasp stride st. backw. bending of head with chest expansion.
Cross (d) st. arm raising with backw. bending of head.
Arm flinging forw., sidew., and downw. with backw. bending of head (quick 3 count movement).
Bend st. (slow) arm stretching upw. with backw. bending of head.
Arm circumduction (2 counts, second slow) with backward bending of head.
Bend st. backward arching, alternating with quick arm stretching sidew.
Alt. foot placing sidew. with hands on hips, and backw. arching.
Arm flinging forw.-upw., sidew. and downw. (= 3 count quick arm circumduction) with backw. bending of head (on first count, held through second).
Bend st. (quick) arm stretching sidew. with alt. toe touching sidew. and backw. bending of head.
Arm bending with alt. foot placing sidew., and backw. arching.

Neck grasp stride st. backw. arching, alternating with arm stretching sidew.
Arm circumduction (quick, 2 count movement) with alt. toe touch sidew. and backw. bending of head.
Alt. foot placing sidew. with hands on neck, and backw. arching.
Cross (a) stride st. backw. arching, alternating with arm flinging sidew.
Hip grasp walk (b) st. backw. arching.
Cross (c) stride st. backw. arching, alternating with arm bending and stretching sidew.
Bend st. (quick) arm stretching upw. with alt. toe touch sidew. and backw. bending of head.
Arm bending with alt. foot placing sidew., and slow arm stretching upw. with backw. bending of head.
Neck grasp stride st. backw. arching alternating with forw.-downw. bending of trunk.
Reach st. arm flinging sidew. with alt. toe touch sidew. and backw. bending of head.
Neck grasp walk (b) st. backw. arching.
Stretch stride st. backw. arching.
Alt. foot placing forw. with hands on hips, and backw. arching.
Cross (c) stride st. backw. arching.
Arm bending with alt. foot placing forw., and backw. arching.
Twist st. arm circumduction (2 counts) with backw. bending of head.
Neck grasp stride st. backw. arching, alternating with arm stretching upw
Forw. bending of arms with alt. foot placing forw. and backw. arching
Arm circumduction (4 counts) with alt. foot placing sidew. and backw bending of head (second and third counts slow, first and fourth quick)
Arm flinging sidew. with alt. toe touch forw. and backw. bending of head
Bend walk (a) twist st. backw. arching.
Bend st. arm stretching sidew. with alt. foot placing sidew., and backw arching.
Alt. foot placing forw. with hands on neck, and backward arching.
Cross (c) walk (b) st. backw. arching.
Arm circumduction (2 counts) with trunk twisting and backw. bending of head.
Bend st. arm stretching upw. with alt. foot placing sidew., and backw arching.
Reach st. arm flinging sidew. with alt. toe touch forw. and backw. bending of head.
Neck grasp walk (a) twist st. backw. arching.
½ sidew. bending of arms with alt. foot placing sidew., and backw. arching
Bend st. arm stretching sidew. with alt. foot placing forw., and backw arching.
Stretch stride st. backw. arching, alternating with arm bending and stretching upw.
Arm circumduction (2 counts) with alt. toe touching forw. and backw bending of head.
½ sidew. bending of arms with alt. foot placing forw. and backw. arching
Arm bending with alt. foot placing outw., trunk twisting, and backw arching (6 counts).
Cross (c) stride st. backw. arching, alternating with arm stretching upw
Stretch walk (b) st. backw. arching.
Bend st. arm stretching upw. with alt. toe touching forw. and backw bending of head.
Cross (c) walk (a) twist st. backw. arching.

Stretch stride st. backw. arching, alternating with arm parting with knee bending.
Alt. foot placing outw. with hands on neck, trunk twisting, and backw. arching (6 counts).
Arm bending with alt. foot placing forw., then arm stretching sidew., palms up, with backw. bending of head.
Cross (d) st. arm raising with backw. arching.
Alt. foot placing outw. with hands on hips and with simultaneous trunk twisting, then backw. arching (4 count movement).
Arm bending with alt. foot placing forw., arm stretching upw. with backw. bending of head.
Stretch stride arch st. arm parting.
Arm bending with alt. foot placing outw. and simultaneous trunk twisting, then backw. arching.
½ sidew. bending of arms with alt. foot placing sidew., then arm stretching upw. with backward arching.
Cross (d) walk (b) arch st. arm raising.
Alt. foot placing outw. with hands on neck and simultaneous trunk twisting, then backw. arching.
Bend st. arm stretching upw. with alt. foot placing forw., and backw. arching.
Arm flinging sidew. (palms up) with alt. foot placing forw., arm raising with backward arching.
Stretch walk (a) twist st. backw. arching.
½ sidew. bending of arms with alt. foot placing outw. and simultaneous trunk twisting, then backw. arching.
Arm circumduction (4 counts) with alt. foot placing forw. and backw. arching.
Cross (d) walk (a) twist st. arm raising with backw. arching.
Forw. bending of arms with alt. foot placing outw., arm flinging sidew with trunk twisting, then backw. arching.
½ sidew. bending of arms with alt. foot placing forw., and (slow) arm stretching upw. with backw. arching.
Cross (a) st. arm flinging sidew. with alt. foot placing outw. and simultaneous trunk twisting, then backw. arching without or with arm rotation
Arm bending with alt. foot placing outw., arm stretching upw. with trunk twisting, then backw. arching (6 counts).
Arm bending (or ½ sidew. bending of arms) with alt. foot placing outw and simultaneous trunk twisting, then slow arm stretching upw. with backw. arching.

Compensatory Forward and Forward-Downward Bendings of Trunk; Downward Bendings, Touching Floor; Stooping; Combinations and Alternations with Arm Movements and Foot Placings.

Hip grasp stride st. forw. bending of trunk.
Bend st. forward bending of trunk.
Alt. foot placing sidew. with hands on hips and forw. bending of trunk.
Hip grasp st. stooping (and return to starting pos.).
Cross (a) (stride) st. forw. bending of trunk.
Arm bending with alt. foot placing sidew. and forw. bending of trunk.
Bend st. stooping.

Neck grasp (stride) st. forw. bending of trunk.
Bend st. forw. bending of trunk, alternating with arm stretching sidew.
Hip grasp stride st. forw.-downw. bending of trunk.
Cross (a) st. stooping.
Alt. foot placing sidew. with hands on neck, and forw. bending of trunk.
Bend stride st. forw.-downw. bending of trunk.
Hip grasp walk (b) st. forw. bending of trunk.
Bend st. stooping, alternating with arm stretching sidew.
Neck grasp stride st. forw.-downw. bending of trunk.
Bend stride st. forw.-down. bending of trunk, alternating with arm stretching sidew.
Neck grasp st. stooping.
Alt. foot placing sidew. with hands on neck, and forw.-downw. bending of trunk.
Bend (wide) stride st. (quick) downw. bending, touching floor (knees and upper back straight), alternating with arm stretching downw.
Hip grasp st. forw.-downw. bending of trunk.
Bend st. stooping, alternating with arm stretching diagonally upw.
Neck grasp walk (b) st. forw. bending of trunk.
Bend (wide) stride st. (quick) downw. bending, touching floor, alternating with arm stretching sidew.
Hip grasp close st. forw.-downw. bending of trunk.
Arm bending (or forw. bending of arms) with alt. foot placing sidew. (wide step), and (quick) downw. bending, touching floor. Return in reverse order.
Neck grasp stride st. forw.-downw. bending of trunk, alternating with arm stretching sidew.
(1) Arm bending (or forw. bending of arms); (2) (double) foot placing sidew. with (quick) downw. bending, touching floor; (3) trunk raising with arm bending (or forw. bending of arms); (4) jump to fund. st. pos.
Bend st. stooping, alternating with arm stretching upw.
Neck grasp close st. forw.-downw. bending of trunk.
Bend stride st. downw. bending, touching floor, alternating with arm stretching upw.
Arm flinging sidew. with alternate foot placing sidew. (wide step), and (quick) downw. bending, touching floor. Return in reverse order.
Neck grasp stride st. forw.-downw. bending of trunk, alternating with arm stretching upw.
Cross (a) stride st. (quick) downward bending, touching floor, alternating with arm flinging sidew.
Stretch stride st. forw.-downw. bending of trunk.
(1) Arm flinging sidew.; (2) foot placing sidew. with (quick) downward bending, touching floor; (3) trunk raising with arm flinging (forw.-) sidew.; (4) jump to fund. st. pos.
Bend stride st. forw.-downw. bending of trunk, alternating with arm stretching sidew. with quick knee bending (or heel raising).
Alt. foot placing sidew. with hands on neck, and quick downw. bending, touching floor (return in reverse order).
Stretch stride st. forw.-downw. bending of trunk, alternating with arm bending and stretching upw.
(1) Placing hands on neck; (2) foot placing sidew. with downw. bending, touching floor; (3) trunk raising with hands on neck; (4) jump to fund. pos.

Bend st. arm stretching sidew. with alt. foot placing sidew., then downw. bending, touching floor (swinging arms forw.-downw. Return in reverse order).

Stretch stride st. forw.-downw. bending of trunk, alternating with arm parting.

Bend stride st. downw. bending, touching floor, alternating with arm stretching upw.

(1) Arm bending (or forw. bending of arms); (2) foot placing sidew. with downw. bending, touching floor; (3) trunk raising with arm flinging (forw.-) sidew.; (4) jump to fund. st. pos.

Bend st. arm stretching upw. with alt. foot placing sidew., and forw.-downw. bending of trunk.

Cross (c) st. arm bending with alt. foot placing sidew., then downw. bending, touching floor (return in reverse order).

(1) Arm bending; (2) foot placing sidew. with downw. bending, touching floor; (3) trunk raising with arm bending; (4) jump to pos. with arm stretching sidew. (or upw.). [Repetitions start from cross (c) (or stretch) st. pos.]

Arm flinging forw.-upw. (or placing hands overhead) with alt. foot placing sidew., then forw.-downw. bending (or downw. bending, touching floor).

Cross (d) stride st. downw. bending, touching floor, alternating with arm raising with knee bending.

Stretch close st. forw.-downw. bending of trunk.

(1) Arm bending (or forw. bending of arms, or arm flinging sidew., or placing hands on neck or overhead); (2) foot placing sidew. with downw. bending, touching floor; (3) trunk raising with arm raising forw.-upw.; (4) jump to fund. st. pos. with arm flinging sidew.-downw.

Stretch stride st. forw.-downw. bending of trunk, alternating with arm parting with knee bending.

[Neck grasp stride st. forw.-downw. bending, alternating with trunk twisting. Cross (c) stride st. downw. bending, touching floor, alternating with trunk twisting.]

Lateral Trunk Exercises.

(1) *Trunk Twistings.*

Bend stride st. trunk twisting (to L. and forw., then to R. and forw.).

Neck grasp stride st. trunk twisting.

Arm bending with alternate foot placing sidew., and trunk twisting.

Neck grasp close st. trunk twisting.

Alt. foot placing sidew. with hands on neck, and trunk twisting.

Cross (a) stride st. trunk twisting.

Bend stride st. trunk twisting (to L. and forward), alternating with arm stretching sidew. (then to R. and forw., etc.).

Forw. bending of arms with alt. foot placing sidew., and trunk twisting.

Arm bending with alt. foot placing (obliquely) outw., and trunk twisting.

Cross (c) stride st. trunk twisting.

Forw. bending of arms with alt. foot placing (obliquely) outw., and trunk twisting.

Alt. foot placing (obliquely) outw. with hands on neck, and trunk twisting.

Bend close st. trunk twisting (and return), alternating with arm stretching sidew.
Neck grasp stride st. alt. trunk twisting all the way from L. to R. in one (quick) movement.
Arm bending with alt. foot placing forw., and trunk twisting.
Cross (a) stride twist st. arm flinging sidew.
Bend stride st. trunk twisting (and return), alternating with arm stretching upw.
Cross (a) stride st. trunk twisting (and return), alternating with arm flinging sidew.
Arm flinging sidew. with alt. foot placing sidew., and trunk twisting.
Close twist st. arm circumduction.
Alt. foot placing forw. with hands on neck, and trunk twisting.
Bend stride st. alt. trunk twisting all the way from L. to R. in one movement, alternating with arm stretching sidew.
Bend stride kneeling trunk twisting.
Forw. bending of arms with alt. foot placing forw., and trunk twisting.
Bend charge (a) st. (=oblique charge) trunk twisting to same side.
Cross (a) stride st. alt. trunk twisting all the way in one movement, alternating with arm flinging sidew.
Cross (c) stride st. trunk twisting.
Neck grasp charge (a) st. trunk twisting to same side.
Arm flinging sidew. with alt. foot placing forw. and trunk twisting.
Arm bending with oblique charge, and trunk twisting to same side.
Neck grasp stride kneeling trunk twisting.
Stretch stride twist st. arm parting.
Oblique charge with hands on neck, and trunk twisting to same side.
Neck grasp stride st. alt. trunk twisting all the way in one movement, alternating with arm stretching sidew. (palms down or up).
Bend charge (a) st. trunk twisting to opposite side.
Cross (a) close st. alt. trunk twisting all the way in one movement, alternating with arm flinging sidew.
½ sidew. bending of arms with alt. foot placing sidew., and trunk twisting.
Neck grasp charge (a) st. trunk twisting to opposite side.
Forw. bending of arms with alt. foot placing outw., then arm flinging sidew. with trunk twisting.
Neck grasp stride st. alt. trunk twisting all the way in one movement, alternating with arm stretching upw.
Arm bending with oblique charge, and trunk twisting to opposite side.
Arm bending with alt. foot placing obliquely outw., then arm stretching sidew. with trunk twisting.
Oblique charge with hands on neck, and trunk twisting to opposite side.
Arm bending with alt. foot placing outw. and simultaneous trunk twisting.
Cross (c) stride st. alt. trunk twisting all the way in one movement, alternating with arm bending and stretching sidew.
Arm bending with oblique charge and simultaneous trunk twisting to same side.
Arm bending with alt. foot placing (obliquely) outw., then arm stretching upw. with trunk twisting.
Alt. foot placing outw. with hands on neck and simultaneous trunk twisting.
Arm bending with alt. foot placing outw., trunk twisting, then arm stretching sidew. (or upw.) and return in reverse order (6 count movement).
Forw. bending of arms with alt. foot placing outw., trunk twisting, then arm flinging sidew. (6 counts).

Oblique charge with hands on neck and simultaneous trunk twisting t same side.
Arm bending with alt. foot placing outw. and simultaneous trunk twisting then arm stretching sidew. (or upw.).
Arm bending with oblique charge and simultaneous trunk twisting t opposite side.
Forw. bending of arms with alt. foot placing outw. and simultaneou trunk twisting, then arm flinging sidew.
Oblique charge with hands on neck and simultaneous trunk twisting t opposite side.
Alt. foot placing outw. with hands on neck and simultaneous trunk twisting, then arm stretching sidew. (or upw.).
Arm bending with oblique charge and simultaneous trunk twisting t same side, then arm stretching sidew. (or upw.).
Arm flinging sidew., palms up, with alt. foot placing outw. and simul taneous trunk twisting, then arm raising.
Forw. bending of arms with oblique charge and simultaneous trunk twisting to same side, then arm flinging sidew.
Arm flinging forw.-upw. with alt. foot placing outw. and simultaneou trunk twisting, then arm parting.
Arm bending with oblique charge and simultaneous trunk twisting t opposite side, then arm stretching upw.
Bend st. oblique charge with trunk twisting to opposite side (hea twisting to same side) and simultaneous arm stretching, one upw the other downw.

The forward charge, with the advancing foot turned straight ahead, th rear foot at right angles, may take the place of a trunk twisting. I corresponds very nearly to the oblique charge with, or followed by, trunk twisting to the same side, but is less "definite" and therefore les powerful as a twisting movement.

Lateral Trunk Exercises (Continued).

(2) *Side Bendings, Leg Flinging Sidew. and Side Falling Position.*

Hip grasp stride st. side bending of trunk (to L. and return, then to R and return).
Bend stride st. side bending of trunk.
Hip grasp st. leg flinging sidew. L. and R. (at first stop at the change Later change without stopping).
Neck grasp stride st. side bending of trunk.
Alt. foot placing sidew. with hands on hips, and side bending of trunk.
Bend stride st. side bending of trunk, alternating with arm stretchin sidew.
Cross (a) stride st. side bending of trunk.
Arm bending with alt. foot placing sidew., and side bending of trunk.
Hip grasp st. alt. leg flinging sidew.
Alt. foot placing sidew. with hands on neck, and side bending of trunk.
Hip grasp close st. side bending of trunk.
Forw. bending of arms with alt. foot placing sidew., and side bending o trunk.
Neck grasp st. side bending of trunk.
Arm bending with closing of feet, and side bending of trunk.
Neck grasp st. leg flinging sidew. L. and R.
Hip grasp walk (b) st. side bending of trunk.

Neck grasp stride st. alt. side bending of trunk all the way from one side to the other in one continuous movement. (This movement may also be given early in the progression as a more or less "indefinite" movement.)
Bend walk (b) st. side bending of trunk.
Closing of feet with hands on neck, and side bending of trunk.
Cross (c) stride st. side bending of trunk.
Neck grasp stride st. side bending of trunk alternating with arm stretching sidew.
Alt. foot placing forw. with hands on hips, and side bending of trunk.
Neck grasp st. alt. leg flinging sidew.
Cross (c) stride st. side bending of trunk.
Arm bending with alt. foot placing forw., and side bending of trunk.
Neck grasp stride st. side bending of trunk, alt. with arm stretching upw.
Arm flinging sidew. with alt. foot placing sidew., and side bending of trunk.
½ hip grasp ½ stretch stride st. side bending of trunk (one side at a time).
Bend st. arm stretching sidew. with alt. foot placing sidew., and side bending of trunk.
St. leg flinging sidew. L. and R., with opposite arm flinging sidew.
Neck grasp walk (b) st. side bending of trunk.
½ sidew. bending of arms with alt. foot placing sidew., and side bending of trunk.
Bend stride st. one arm stretching upw. with placing of the other hand on hip, and side bending of trunk (4 count movement, alternating to L. and R.).
St. alt. leg flinging sidew. with opposite arm flinging sidew.
Alt. foot placing forw. with hands on neck, and side bending of trunk.
Side lunge with hands on hips, and side bending of trunk.
Forw. bending of arms with alt. foot placing forw. and side bending of trunk.
Stretch stride st. side bending of trunk.
Bend st. leg flinging sidew. L. and R. with opposite arm stretching sidew. and placing of hand on same side on hip.
Cross (c) walk (b) st. side bending of trunk.
½ hip grasp side falling pos. (side leaning rest) and return (6 count movement).
Alt. foot placing sidew. with one arm overhead, the other hand on hip, and side bending of trunk.
Hip grasp stride st. side-and-knee bending.
Bend walk (a) twist st. side bending of trunk.
Arm flinging sidew. with alt. foot placing forw. and side bending of trunk.
Arm flinging forw. with alt. leg flinging sidew.
Side lunge with hands on neck, and side bending of trunk.
St. leg flinging sidew. L. and R. with opposite arm flinging sidew.-upw.
Neck grasp walk (a) twist st. side bending of trunk.
Arm flinging forw.-upw. (and sidew.-downw.) with alt. foot placing sidew. and side bending of trunk.
Neck grasp stride st. side-and-knee bending.
½ hip grasp side falling pos., about facing and return to st. pos. (8 counts).
½ sidew. bending of arms with alt. foot placing forw., and side bending of trunk.
Arm flinging sidew. with alt. side lunge, and side bending of trunk.
St. alt. leg flinging sidew. with arm circumduction (1 count on each side).

Cross (c) stride st. side-and-knee bending.
Alt. foot placing outw. with hands on neck, trunk twisting, then side bending of trunk.
Arm bending with side lunge, then arm stretching sidew. with side bending of trunk (one hand touching floor, the other arm vertically overhead).
½ hip grasp side falling pos., leg raising, then return to st. pos. (8 counts).
Cross (c) stride st. side-and-knee bending, alternating with arm bending and stretching sidew.
Alt. foot placing outw. with hands on neck and simultaneous trunk twisting, then side bending of trunk.
Arm flinging sidew. with alt. foot placing sidew., then side-and-knee bending.
Alt. side lunge with one arm overhead, the other hand on hip, and side bending of trunk.
Hip grasp st. side bending of trunk with raising of leg on other side.
Oblique charge with hands on hips and simultaneous trunk twisting to opposite side, then side bending of trunk (to same side as charge).
Arm bending with alt. foot placing sidew., then arm stretching sidew. with side-and-knee bending (one arm vertical, the other hand touching floor).
Arm flinging sidew. with alt. foot placing outw. and simultaneous trunk twisting, then side bending of trunk.
Cross (c) st. side bending of trunk with raising of leg on other side.
Bend st. arm stretching upw. with alt. foot placing forw., and side bending of trunk.
Oblique charge with hands on neck and simultaneous trunk twisting to opposite side, then side bending of trunk (to same side as charge).
Side lunge with arm flinging sidew. on same side, upw. on opposite side, then side bending of trunk (one hand touching floor, the other arm horizontally overhead, in line with trunk).
Bend stride st. arm stretching sidew. with side-and-knee bending, alternating with arm stretching upw.
Neck grasp st. side bending of trunk with raising of leg on other side.
Forw. bending of arms with alt. foot placing outw., arm flinging sidew. with trunk twisting, then side bending of trunk (6 count movement).
Arm flinging forw.-upw. (and sidew.-downw.) with side lunge, then side bending of trunk.
Arm bending with alt. foot placing outw., arm stretching upw. with trunk twisting, then side bending of trunk (6 count movement).
½ bend side falling pos., arm stretching upw. with leg raising (8 counts).
Stretch st. side bending of trunk with raising of leg on other side.

Back and Shoulder Blade Movements.

Hip grasp stride st. forw. bending of trunk.
Bend st. forw. bending of trunk.
Neck grasp stride st. forw. bending of trunk.
Alt. foot placing sidew. with hands on hips, and forw. bending of trunk.
Bend stride st. forw. bending of trunk, alternating with arm stretching sidew.
Cross (a) close st. forw. bending of trunk.
Arm bending with alt. foot placing sidew., and forw. bending of trunk.
Cross (a) stride st. forw. bending of trunk, alternating with arm flinging sidew.

Alt. foot placing sidew. with hands on neck, and forw. bending of trunk.
Hip grasp walk (b) st. forw. bending of trunk.
Forw. bending of arms with alt. foot placing sidew., and forw. bending of trunk.
Cross (c) stride st. forw. bending of trunk.
Alt. foot placing forw. with hands on hips, and forw. bending of trunk.
Bend (stride) prone st. arm stretching sidew. (palms down).
Arm flinging sidew. with alt. foot placing sidew., and forw. bending of trunk.
Bend stride st. forw. bending of trunk, alternating with arm stretching upw.
Cross (a) stride prone st. arm flinging sidew.
Neck grasp walk (b) st. forw. bending of trunk.
Forw. bending of arms with closing of feet, and forw. bending of trunk.
Bend close prone st. arm stretching sidew., palms up.
Arm bending with forw. charge.
Cross (c) prone st. arm rotation.
Alt. foot placing forw. with hands on neck, and forw. bending of trunk.
Hip grasp toe-support charge.
Prone st. arm circumduction.
Forw. charge with hands on neck.
½ sidew. bending of arms with alt. foot placing sidew., and forward bending of trunk.
Arm flinging sidew. with forw. charge.
Stretch stride st. forw. bending of trunk.
Neck grasp toe-support charge.
Arm flinging sidew. with alt. foot placing forw., and forw. bending of trunk.
Bend st. forw. charge with arm stretching sidew.
Bend walk (a) twist st. forw. bending of trunk.
Arm flinging sidew. with toe-support charge.
Cross (a) prone st. swimming movements.
Arm bending with forw. charge, then arm stretching sidew.
½ sidew. bending of arms with alt. foot placing forw., and forw. bending of trunk.
Arm bending with alt. foot placing outw., trunk twisting, then forw. bending of trunk (6 counts).
Arm bending with toe-support charge, then arm stretching sidew.
Bend stride prone st. arm stretching upw.
Arm flinging forw.-upw. (or arm circumduction) with alt. foot placing sidew., and forw. bending of trunk.
Forw. bending of arms with toe-support charge, then arm flinging sidew.
Alt. foot placing outw. with hands on neck, trunk twisting, then forw. bending of trunk (6 counts).
Cross (c) stride prone st. arm rotation.
Arm bending with alt. foot placing sidew., forw. bending of trunk, then arm stretching sidew. (6 counts).
Arm flinging forw.-upw. with forw. charge.
Stretch stride prone st. arm parting.
Forw. charge with hands on hips, and forw. bending of trunk.
Arm flinging forw.-upw. with toe-support charge.
Arm bending with alt. foot placing forw., forw. bending of trunk, then arm stretching sidew. (6 counts).
Forw. charge with hands on neck, and forw. bending of trunk.
Alt. foot placing outw. with hands on neck and simultaneous trunk twisting, then forw. bending of trunk.

Arm bending with toe-support charge (or forw. charge), then arm stretching upw.
Arm bending with oblique charge, trunk twisting to same side, then forw. bending of trunk (6 counts).
Arm flinging upw. with toe-support (or forw.) charge, then arm parting.
Arm bending with alt. foot placing sidew., forw. bending of trunk, then arm stretching upw. (6 counts).
Hip grasp horizontal ½ st. pos.
Arm bending with alt. foot placing forw., forw. bending of trunk, then arm stretching sidew. (or upw.) (6 counts).
Oblique charge with hands on neck, trunk twisting to same side, then forw. bending of trunk (6 counts).
Forw. bending of arms with alt. foot placing outw., arm flinging sidew. with trunk twisting, then forw. bending of trunk (6 counts).
Arm bending with oblique charge and simultaneous trunk twisting, then forw. bending of trunk.
Neck grasp horizontal ½ st. pos.
Arm flinging forw.-upw. with alt. foot placing sidew., forw. bending of trunk, then arm parting (6 counts).
Oblique charge with hands on neck and simultaneous trunk twisting, then forw. bending of trunk.
Arm bending with alt. foot placing outw., arm stretching upw. with trunk twisting, then forw. bending of trunk (6 counts).
Stretch horizontal ½ st. pos.
Arm bending (or placing hands on neck) with alt. foot placing outw. and simultaneous trunk twisting, forw. bending of trunk, then arm stretching sidew. (or upw.) (6 counts).
Arm bending with alt. foot placing outw., arm stretching upw. with trunk twisting, then forw. bending of trunk, followed by arm parting (8 counts).

Abdominal Exercises.

Knee Upward Bending and Leg Flinging Forward. Prone Falling Position. Foot Placings from Prone Falling Position. Kneeling Position: Backward Leaning of Trunk. Horizontal Lying Position: Knee Upward Bending and Leg Raising.

Knee upw. bending L. and R., grasping knee and pressing it toward chest.
Hip grasp st. knee upw. bending L. and R. (as high as possible without bending head and upper trunk forw.). Position at the end of the up-stroke not held. On the return the weight should settle equally on both feet and the position be held for an instant. At first, stop the movement when changing from one side to the other. Later, changes are made without stopping, and without warning. This compels the settling of the weight equally on both feet. The above applies also to standing leg flinging forw. and sidew.
Hip grasp st. leg flinging forw. L. and R.
Hip grasp st. alt. knee upw. bending (with and without holding the fund. pos. a moment at the change).
Hip grasp st. alt. leg flinging forw. (pos. held at the change).
Neck grasp st. alt. knee upw. bending.
Neck grasp st. alt. leg flinging forw.
Hip grasp toe st. alt. knee upw. bending (pos. not held at the change).

Neck grasp toe st. alt. knee upw. bending (pos. not held at the change).
Hip grasp toe st. knee upw. bending R. and L.
St. alt. leg flinging forw. with opposite arm flinging sidew.-upw. (1 count each side).
Hip grasp st. leg circumduction L. and R., and alternate.
Arm circumduction with alt. leg flinging forw. (1 count each side).

Prone falling pos. (front leaning rest) and return (4 counts).
Prone falling pos. with one foot forw., the other leg extended: alt. foot placing forw.-backw.
Prone falling foot placing (both feet) forw. and backw. once and return (6 counts).
Prone falling foot placing forw. and backw. repeatedly.
Prone falling foot placing sidew. (both feet simultaneously) once and return (6 counts).
Prone falling foot placing sidew. repeatedly.
Prone falling arm bending once and return (6 counts).
Prone falling foot placing forw. and backw. once, then arm bending once, and return (8 counts).
Prone falling arm bending repeatedly.

Hip grasp stride kneeling backw. leaning of trunk (the movement takes place at the knee. Head, chest, upper and lower back should be kept in the fundamental pos. On command only).
Hip grasp ½ kneeling backw. leaning of trunk (on one knee; the other foot advanced far enough to flex the knee on that side 90°).
Kneeling and ½ kneeling backw. leaning of trunk with arms in the bend, cross (a), neck grasp, cross (e) and stretch positions.

Neck grasp (or diagonal stretch) lying knee upw. bending L. and R.
Neck grasp lying alt. knee upw. bending (each movement completed before the next one begins, or both beginning at the same time, one from the bent, the other from the extended, pos.).
Neck grasp lying knee upw. bending (both at the same time).
Neck grasp lying alt. knee upw. bending and stretching obliquely upw. (45°).
Neck grasp lying alt. leg raising (each movement completed before the next begins).
Neck grasp lying knee upw. bending and stretching obliquely upw. to 45° angle (both moving together).
Neck grasp lying leg raising (both at the same time).
Neck grasp lying alternating leg raising (both moving at the same time, but in opposite directions).
Neck grasp lying leg raising and sinking sidew. (both moving together).
Neck grasp lying leg circumduction (both moving together).

Balance Exercises.

Hip grasp close toe st. pos.
Hip grasp ½ st. pos., leg forw.
Neck grasp close toe st. pos.
Hip grasp ½ hook st. pos. (one knee raised, 90° angle at hip and knee).
Hip grasp ½ st. pos., leg sidew.

Hip grasp toe st. head twisting.
Hip grasp walk (b) toe st. pos.
Hip grasp st. alt. knee upw. bending (2 counts each side), on command or in slow rhythm (quick movements) stopping unexpectedly.
Preparation for balance march, advancing one foot and raising the heel of the other foot in separate movements (on command).
Neck grasp ½ st. pos., leg forw.
Hip grasp toe st. knee bending.
Balance march, each step complete, on command.
Hip grasp walk (b) toe st. head twisting.
Neck grasp toe st. alt. knee upw. bending (rhythmic).
Neck grasp walk (b) toe st. arm stretching sidew. (or upw.).
Hip grasp toe st. march steps forw. (each on command).
Balance march, continuous movement, slow rhythm.
Hip grasp walk (a) st. heel raising and knee bending (on command).
Hip grasp ½ hook st. knee stretching forw.
Hip grasp toe st. march steps backw. (each on command).
Hip grasp ½ hook st. change feet in one quick movement (with a jump).
Arm circumduction with alt. leg raising sidew.
Hip grasp toe-knee bend st. head twisting.
Cross (c) ½ st. pos., leg forw.
Balance march with knee upw. bending.
Reach ½ st. pos., leg sidew., arm parting (or flinging sidew.).
Stretch walk (c) toe st. arm parting.
Hip grasp ½ st. pos., leg forw.: bending of knee of supporting leg.
Hip grasp toe-support charge pos.
Hip grasp ½ st. pos., leg forw.: change feet in one quick movement (with a jump).
Hip grasp walk (b) st. heel raising and knee bending.
Reach ½ st. pos., leg forw.: bending of knee of supporting leg.
Bend ½ hook st. (slow or quick) arm stretching sidew. with knee stretching forw.
Hip grasp ½ st. pos., leg sidew.: change feet in one quick movement.
Neck grasp toe-support charge pos.
Cross (a) ½ hook st. arm flinging sidew. with knee stretching forw.
Neck grasp ½ st. pos. leg forw.: knee bending (supporting leg).
Cross (c) toe-support charge pos.
Bend ½ hook st. arm stretching upw. with knee stretching forw.
Cross (c) ½ st. pos., leg forw.: heel raising (pupils support each other by joining hands).
Stretch toe-support charge pos.
Cross (a) walk (b) toe-knee bend st. arm flinging sidew.
Hip grasp st. side bending of trunk with raising of opposite leg.
Cross (c) ½ st. pos., leg sidew.: heel raising (pupils support each other).
Reach ½ st. (leg forw.) arm parting with knee bending (supporting leg).
Cross (d) walk (b) toe st. arm raising with knee bending.
Hip grasp horizontal ½ st. pos. (= leg raising from toe-support charge pos.).
Cross (c) ½ st. pos., leg forw.: heel raising (without support).
Neck grasp st. side bending of trunk with raising of opposite leg.
Cross (c) horizontal ½ st. pos.
Neck grasp horizontal ½ st. pos.
Cross (c) ½ st. pos., leg sidew.: heel raising (without support).
Cross (c) st. side bending of trunk with raising of opposite leg.
Stretch horizontal ½ st. pos.
Cross (d) ½ st. pos., leg forw.: arm raising with heel raising.

Arm Movements.

[In the beginning of any series of lessons many of the following arm movements may be practiced separately as shoulder blade exercises or preparatory arching movements. Many of them may be used at any time as breathing exercises. As fast as their correct execution is mastered, they may be used in combination or alternation with leg and trunk movements, serving to increase the complexity and power of the latter. Care must be taken, however, to distribute this class of movements judiciously throughout a lesson, to vary the types and to avoid excessive recurrence.]

Arm bending and stretching downw. (on command, and repeated in even rhythm).
Arm raising or flinging sidew.
Arm rotation (turning of hands).
Forw. bending of arms (not well suited for rhythmic repetition, though may be so used if positions at each end of the movement are well sustained).
Placing hands on neck (command only).
Arm bending and stretching sidew. (on command, and repeated in even rhythm).
Change from hip grasp to neck grasp st. pos. (command only).
Cross (a) st. arm flinging sidew. (if repeated in rhythm, positions should be well sustained).
Arm raising or flinging sidew. with palms up.
Arm bending and stretching sidew. and downw. (command, and at first even, later uneven, rhythm, holding the extended longer than the flexed pos.).
Bend st. arm stretching sidew. with palms up (slow or quick, command or rhythm).
Cross (c) st. arm rotation (slow or quick, on command).
Arm raising forw. (command only).
Arm bending and stretching obliquely upw. (command, even and broken rhythm).
Arm raising or flinging forw.-sidew. (return through side plane).
Arm circumduction, 2 counts (=arm raising or flinging forw.-upw. and returning through side plane, turning palms down as arms pass the horizontal, without stopping).
Arm raising or flinging forw.-sidew., palms up (2 counts).
Arm bending and stretching upw. (command and even rhythm).
Reach st. arm parting, palms down or up (slow or quick). (In the latter case arm flinging sidew. is a better designation. The return movement is best done slowly in any case.)
Arm bending and stretching upw. and downw. (repetitions in even and broken rhythm).
Arm flinging forw., sidew. (palms down or up) and downw. (3 count movement, each part quick, positions held momentarily).
Arm bending and stretching upw. and sidew. (repetitions in uneven rhythm).
½ sidew. bending of arms (command only).
Cross (d) st. arm raising.
Arm circumduction, 3 counts (= arm flinging forw.-upw., then sidew. with palms up, and then downw.; all are quick movements).
Neck grasp st. arm stretching sidew. or upw.
Arm raising or flinging sidew.-upw. (continuous movement each way).

Arm flinging forw., sidew. (palms down or up), forw. and downw.
Stretch st. arm parting (slow, on command).
Arm bending and stretching backw. and sidew. (uneven rhythm).
Cross (e) st. arm stretching sidew., palms down or up (command).
Arm bending and stretching one sidew., the other downw. (command and even or broken rhythm).
Reach st. arm flinging upw. (command).
Arm bending and stretching forw. and sidew. (uneven rhythm).
Cross (e) st. arm stretching upw. (slow or quick, on command).
Arm bending and stretching upw. and sidew. (uneven rhythm).
Arm flinging sidew. and upw. (returning sidew. and downw.; hands are turned on the second and fourth counts).
Arm bending and stretching upw., sidew., and downw. (uneven rhythm).
Cross (e) st. arm rotation (on command).
Arm bending and stretching one upw., the other downw.
Arm bending and stretching forw., upw., and sidew.
Arm bending and stretching one upw., the other sidew.
Arm bending and stretching forw., upw., sidew., and downw.
Arm bending and stretching one forw., the other sidew.

Charges.

Hip grasp st. oblique charge or, preferably, oblique charge with (placing of) hands on hips.
Arm bending with oblique charge.
Forw. charge with hands on hips.
Oblique charge with hands on neck.
Arm bending with forw. charge.
Forw. bending of arms with oblique charge.
Forw. bending of arms with forw. charge.
Arm flinging sidew. with forw. charge.
Hip grasp toe-support charge pos.
Arm bending with oblique charge, then trunk twisting to same side.
Bend st. arm stretching sidew. with forw. charge.
Bend toe-support charge pos.
Bend st. oblique charge with arm stretching upw. on the same side (as charge) downw. on opposite side. Return in the usual way, or by afterstep (rear foot to the advanced foot).
Cross (a) toe-support charge pos.
Forw. bending of arms with forw. charge, then arm flinging sidew.
Reverse (backw.) charge with hands on hips.
Oblique charge with hands on neck, then trunk twisting to same side.
Cross (c) toe-support charge pos.
Reverse oblique charge with hands on hips.
Arm flinging forw.-upw. with forw. charge.
Arm bending with oblique charge, then trunk twisting to opposite side.
Reverse (backw.) charge with hands on neck.
Bend st. arm stretching upw. with forw. charge. Return in the usual way, or by afterstep.
Reverse oblique charge with hands on neck.
Neck grasp toe-support charge.
Oblique charge with hands on neck, then trunk twisting to opposite side.
Arm flinging sidew. with reverse (backw.) charge.
Arm bending with forw. charge, then arm stretching sidew.
Arm bending with reverse oblique charge, then trunk twisting to side of advanced foot.

Stretch toe-support charge pos.
Arm bending with oblique charge and simultaneous trunk twisting to same side.
Arm bending with forw. charge, then arm stretching upw.
Reverse oblique charge with hands on neck, then trunk twisting to side of rear foot.
Cross (e) toe-support charge pos.
Arm bending with oblique charge and simultaneous trunk twisting to opposite side.
Arm bending with forw. charge, then arm stretching downw. on same side (as charge), upw. on opposite side. Afterstep.
Arm bending with reverse oblique charge and simultaneous trunk twisting to side of advanced foot.
Oblique charge with hands on neck and simultaneous trunk twisting to same side. Same with twisting to opposite.
Bend st. oblique charge with arm stretching upw. on same side, downw. on opposite side and with simultaneous trunk twisting to opposite side, head twisting to same side. Return in the usual way, or with afterstep.
Same with reverse oblique charge.

Note.—In all oblique charges in which the return is made by replacing the advanced foot, the change may be accompanied by a 90° facing, so that each foot strikes the floor in the same place.

Free-Standing Jumps, Toe Jumps, etc.

Hip grasp st. jump on toes.
Jump in place with side-flinging of arms.
Hip grasp st. jump on toes with foot placing sidew. (stride jump).
St. jump forw.
Hip grasp st. jump on toes with alt. foot placing forw.-backw. (weight equally on both feet. Feet pass each other at each step).
Hip grasp st. jump on toes in quick and slow rhythm.
Jump forw., with one or two start steps.
Hip grasp st. hop on one foot 8-10 times. Stop at the change.
Hip grasp st. jump on toes with foot placing forw.-backw. and together (passing through toe st. pos. each time).
Jump in place with side flinging of arms and 90° turn.
Jump on toes with arm flinging sidew.
Hip grasp st. jump on toes alternatingly forw. and backw. (feet together).
Hip grasp st. jump on toes with foot placing sidew. and crossing of feet.
St. jump sidew.
Hip grasp st. jump on toes with both feet moving together from one side to the other.
Jump on toes with foot placing sidew. and arm flinging sidew.-upw.
Jump in place with side flinging of arms and 180° turn.
Hip grasp ½ st. (leg sidew.) jump on toes with alt. leg flinging sidew.
Hip grasp st. jump on toes with foot placing sidew., alternating with foot placing forw.-backw.
Hip grasp ½ st. (one foot raised behind) hop on one foot and swing other foot forw. and backw. (by stretching and bending knee).
Hip grasp ½ st. (leg forw.) rocking (cut) step forw. Stop at change.
Jump on toes with foot placing forw.-backw. and alt. arm flinging forw.
Hip grasp ½ st. (one foot raised backw.) rocking (cut) step backw.
Jump on toes with arm flinging sidew. (-upw.) and foot placing sidew., and with crossing of hands and feet on return.
Hip grasp st. jump on toes with alt. knee upw. bending.

Hip grasp ½ st. rocking (cut) step forw., change at seventh count by foot placing sidew.

Hip grasp ½ st. (leg sidew.) change feet and hop once on each foot.

Jump on toes with L. and R. leg flinging sidew. and arm flinging sidew., and with crossing of hands and feet on the return.

Hip grasp ½ st. (one foot raised backw.) hop on one foot and swing other forw., change and swing other foot backw.

Hip grasp ½ st. (leg sidew.) change feet and hop once on each foot with bending and stretching of other knee ("kick"), turning toward side of swinging leg.

Hip grasp st. hop twice on each foot with toe-and-heel touch and turns.

(1) Hop twice on R. foot with arm flinging and L. leg flinging sidew.; (2) landing with hands and feet crossed and knees slightly bent; (3) jump with arm flinging and foot placing sidew. (landing in cross (c) stride toe st. pos.); (4) jump to fund. pos. Repeat with R. leg flinging sidew. on first count.

(1) Leap obliquely forw. on L. foot with L. arm diagonally overhead and R. arm and R. leg behind; (2) hop once on L. foot, while retaining pos. of L. arm and R. leg. Repeat on other side and continue with zigzag advance.

(1) Leap and (2) hop on L. foot (as in preceding); (3) jump to the pos. with knees slightly bent and hands and feet crossed; (4) jump to the cross stride toe st. pos.; (5) jump to fund. pos.; (6) hold fund. pos. (this is the Hungarian break, modified). Repeat on other side.

(1) Leap and (2) hop on L. foot; (3) jump to R. foot with arm flinging sidew. and raising of L. knee forw.; (4) hop once on R. foot, arms and L. leg retaining previous pos.; (5), (6), (7) and (8), modified Hungarian break, as above.

2. Apparatus Exercises.

Terminology.*

Positions:

Standing pos. On one foot or both feet.

Sitting pos. Body vertical, hip flexed 90° (one or both); knee straight or flexed 90° (one or both).

Hanging pos. Hands at least shoulder distance apart.

Upper arm hanging pos. Body supported on (forearms and) upper arms.

Inverted hanging pos. Head down; body approximately straight.

Fall hanging pos. Body straight, partly supported on heels; face up; hands at least shoulder distance apart; grasp usually at shoulder height, but may be lower.

Prone hanging pos. Body as straight as possible (though inevitably more or less arched), partly supported on toes; face down; hands and grasp as for fall hanging pos.

Knee hanging pos. (inverted).

Riding pos. Support on thighs only.

*In the main, the terminology adopted by the Y. M. C. A. has been followed.

Rests (body partly supported on arms, partly on legs):

Front rest. On hands and thighs, facing at right angles to the support; body straight or slightly arched, inclined about 45°.

Free front rest (momentary). No support on thighs; body straight, approaching horizontal.

Oblique front rest (occurs on parallel bars only). Body straight, supported on hands (one on each bar) and on one thigh, facing downw., 30°-40° to the support; inclined about 30° to the horizontal.

Back rest. Support on hands and buttocks. Body straight, facing up, and at right angles to the support. Inclinations about 45°.

Oblique back rest (on parallel bars and horse chiefly). On hands and one hip. Face up and turned about 45° away from support. Inclination 45°-60° to horizontal.

Cross rest (on parallel bars). Body straight and vertical, supported entirely on hands.

Riding rests, body erect, supported partly on hands, partly on thighs.

(a) Cross riding rest: facing in the direction of the long axis of the apparatus (parallel bars, horse), support on inside of thighs.

(b) Side riding rest; facing at right angles to long axis of apparatus, support on front of one thigh, back of the other.

Grasps:

Ordinary or overgrasp. Palms facing forw.

Reverse grasp. Palms facing backw.

Combined grasp. One hand each way.

Wide and narrow grasp. More and less than shoulder distance between hands.

Movements:

Mounts. A spring from both feet (usually), preceded or not by a short run, to stated position on apparatus. When mounting to middle of parallel bars from ends, swing arms straight, inside bars.

Principal mounts: squat, straddle, ½ squat ½ straddle mounts; face vault and side vault mounts. Like corresponding vaults. Jump mount (usually from one foot) to standing pos. on one foot or both feet.

Dismounts. From position on apparatus to floor.

Forward: In the direction faced when in the last pos. on apparatus.

Backward: In the opposite direction.

Sideways: In a direction at right angles to last pos.

Face (vault) dismount L. and R.: Front of the body toward apparatus at moment of leaving it.

Back (vault) dismount L. and R.: Back of the body toward apparatus when leaving it.

Side (vault) dismount: Side of the body toward apparatus when leaving it.

Jumps. From one foot or both feet without help of hands to or over apparatus.

Hop: Spring from one foot, land on same foot.

Step: Spring from one foot, land on the other.

Jump: Spring from one foot or both feet, land on both feet, or in any given pos. on apparatus.

Vaults. From one foot or both feet, over an apparatus with support on one or both hands.

I. Vertical vaults: Body erect when passing apparatus, only momentary support on hands.
Squat vault: Feet pass between hands.
Straddle vault: Feet pass outside of hands.
½ squat ½ straddle vault: One foot between, other foot outside hands. L. and R. refer to outside foot.
Knee vault: Between hands, with momentary support on and quick spring from lower leg.
½ knee ½ straddle vault: As preceding with one knee, other leg straight, outside hand.
Front vault: Between hands; body approximately in fund. pos., somewhat arched. Chest leading, feet last.
Rear (or backw.) squat vault: As squat vault, but body turned 180° before passing apparatus.
Rear (or backw.) straddle vault: As straddle vault, but body turned 180° before passing apparatus.
Cross-legged straddle vault: Feet outside hands, legs crossed, hips turned, shoulders square to the front.

II. Horizontal vaults: Body approximately in horizontal pos. when passing apparatus; support on hands somewhat longer than in vertical vaults.
Face vault: Front of body toward apparatus at the moment of passing it.
Side vault: Side of the body toward apparatus.
Back vault: Back of the body toward apparatus. (There is more or less of a bend at the hips.)
Oblique (back) vault: From one foot with support of opposite hand. Back of body toward apparatus. Direction of approach and passing apparatus about 45°.

Turns. On apparatus or on landing in vaults and dismounts: ¼ = 90°, ½ = 180°, ¾ = 270°, full turn = 360°.

Circles. 1. Body. Forward: head moves in the direction faced. Backw.: in opposite direction.
2. Leg. ½ circle = 180°; full circle = 360°.
Left: in direction opposite hands of clock. Right: with hands of clock.

(1) Apparatus Exercises for Women.

Horizontal Ladder.

Hanging pos. (one hand on each side, several pupils at once). Dismount.
Hanging pos.: alt. knee upw. bending (2 counts each side).
Hanging pos.: alt. side swing from waist.
Travel forw., hands outside, with side swing from waist.
Travel backw., hands outside, with side swing from waist.
Hanging pos.: alt. knee upw. bending (both move simultaneously, in opposite directions).
Travel forw., hands outside, without swing.
Travel backw., hands outside, without swing.
Hanging pos.: alt. knee upw. bending and stretching forw.

Travel sidew., hands on outside, with swing from waist, L. hand leading, then R. hand leading.
Hanging pos.: knee upw. bending (both).
Hanging pos.: side swing from waist and shoulders, with alt. arm bending.
Travel sidew. without swing. L. and R. hand leading.
Hanging pos.: knee upw. bending (both) with simultaneous alt. trunk twisting and slight swinging to same side.
Rotary traveling forw. on rungs, skipping one, turning forw. 180° alternately L. and R. with swing. Grasp each time with palm facing forw.
Swing jump (start from bench placed close to wall).
Travel forw. on rungs, one at a time, first L. hand leading, then R. hand.
Start swing, dismount on first backw. swing.
Rotary traveling backw. on rungs, skipping one, turning (backw.) 180° L. and R. Grasp with back of hand facing in the direction of the movement.
Travel backw. on rungs, one at a time, first L. hand leading, then R. hand.
Short jumps forw., hands on sides of ladder.
Start swing, dismount on next forw. swing.
Travel forw. and backw. on rungs, skipping one at each step, without swing.
Travel sidew. on rungs.

High Boom.

Hanging pos. Dismount.
Hanging pos.: alt. knee upw. bending (2 counts each side).
Hanging pos.: alt. side swing from waist.
Hanging pos.: alt. knee upw. bending (both move simultaneously, in opposite directions.
Hand traveling sidew., L. and R. leading, with side swing from waist.
Hanging pos.: alt. knee upw. bending and stretching forw.
Hand traveling sidew., L. and R. leading, without swing.
Hanging pos.: knee upw. bending (both).
Hanging pos.: side swing from waist and shoulders, with alt. arm bending.
Rotary hand traveling forw. (combined grasp), turning (forw.) 180° L. and R. alternately.
Jump to bent arm hanging pos. with combined grasp, slow arm stretching. (Use assistance, if necessary, on the mount.)
Hanging pos.: knee upw. bending (both) with alt. trunk twisting and swing to same side.
Jump from behind boom, swing forw. and dismount (= swing jump, standing start, from both feet).
Rotary hand traveling backw. (combined grasp), turning (backw.) 180° L. and R. alternately.
Jump from behind boom, start swing, dismount on first backw. swing.
Jump from behind boom, start swing, dismount on next forw. swing.
Rotary hand traveling, starting with reverse grasp, turning 180° L. to ordinary grasp, etc. Repeat turning to R. each time.
Jump, start swing, dismount on first backw. swing with 90° turn L. and R.
Jump, start swing, dismount on next forw. swing with 90° turn L. and R.
Swing jump, running start from both feet, without and with turns on landing.

Low Boom.

1. Suspension exercises.

Grasp bend toe st. arm stretching with knee bending (boom at height of chin).
Fall hanging pos. (boom at height of shoulders or lower) and return by moving one foot at a time.
Fall hanging pos.: arm bending and return through deep knee-bend st. pos.
Fall hanging pos.: hand traveling sidew.
Fall hanging pos.: touch floor with L. hand, then R. hand.
Fall hanging pos.: arm bending 4-6 times; swing up to standing pos.
Fall hanging pos.: hand traveling sidew. with bent arms.

2. Arm support exercises and vaults.
(All exercises to be done from standing start. Boom height of hips or waist.)

Free front rest.
Front rest, dismount straight backw.
Preparation for side vault: swing legs L. and R.
Front rest, dismount backw. with 90° turn L. and R.
Low side vault L. and R.
Free front rest with 90° turn on landing.
Front rest: reverse grasp, forw. circle to fall hanging pos., swing up to standing pos.
Low face vault L. and R. (combined grasp).
Reverse grasp: backw. circle to front rest; dismount backw.; or return by forw. circle to fall hang. pos. (boom at height of shoulders).
Back vault L. and R.

Double Boom.

Serpentine traveling (from grasp sitting pos. Pupils move around each other).
Standing oblique vault from outside foot, outside hand on upper boom, inside hand on lower boom.
Running oblique vault from one foot, one hand on each boom.
Running oblique swing jump from one foot, both hands on upper boom.
Running side vault L. (from both feet, L. hand on upper, R. hand on lower boom).
Running side vault R. (from both feet, R. hand on upper, L. hand on lower boom).
Running oblique swing jump from both feet, both hands on upper boom.
Running back vault L., L. hand on upper, R. hand on lower boom.
Running back vault R., R. hand on upper, L. hand on lower boom.
Running side vault L. with 90° R. turn.
Running side vault R. with 90° L. turn.
Running back vault L. with 90° L. turn.
Running back vault R. with 90° R. turn.
Running swing jump (perpendicular approach) from both feet.
With upper boom at height of shoulders or head: mount to momentary front rest, then high face vault L., L. hand on lower, R. hand on upper boom.
High face vault R., R. hand on lower, L. hand on upper boom.

Saddle Boom.

(All exercises to be done with running start.)

Free front rest.
Preparation for side vault: swing legs to L. and R.
Squat mount, dismount forw. (ordinary or rising dismount).
½ squat mount (other leg behind); rising dismount forw.
Squat vault.
½ squat ½ straddle mount; rising dismount.
Side vault L. and R.
½ squat ½ straddle vault L. and R.
Side vault L. and R. with 90° turn R. and L., respectively.
Straddle vault.

Vertical Ropes.

Grasp bend toe st. arm stretching with knee bending.
Fall hanging pos.: arm bending; return through knee bend st. pos.
Jump to hanging pos.; dismount.
Fall hanging alt. leg raising.
Jump to bent arm hanging pos.: slow arm stretching.
Fall hanging pos.: touch floor with L. and R. hand.
Climbing pos. (arms straight, hips and knees flexed, feet well forw.).
Run, swing forw., then backw. and dismount.
Climbing pos.: arm bending and stretching.
Prone hanging pos. by placing one foot at a time backw.
Run, start swing, dismount on forw. swing.
Climbing, using arms and legs, in three distinct movements: (1) Jump to climbing pos. with straight arms, etc.; (2) bend arms with straightening of legs; (3) shift hands as high as possible (straight arms). Then (1) draw knees up with feet well forw., *keeping arms straight;* (2) bend arms, etc. (as before).
Prone hanging pos.: change to fall hanging pos.
Run, jump (before ropes pass the vertical) to bent arm hanging pos. Dismount on next backw. or forw. swing.
Run, jump, grasp as high as possible and at the same time raise legs; dismount immediately.
Run, jump, take high grasp, bend arms and raise legs, then dismount (= swing jump).
Climbing on two ropes. Movements the same as when climbing on one rope, but the hands should be shifted simultaneously, and very quickly, as soon as arms are bent and legs straight.
Inverted hanging pos. on 2 ropes. Return forw. by bending at hips, and with arm bending.
Horizontal or oblique climbing from rope to rope. Climb up a little on one rope, grasp the next rope with *one hand,* then with the legs, then release grasp of other hand and repeat immediately.
Quick backw. circle between two ropes.
Inverted hanging pos. on one rope.

Window Ladder.

Climb up one or two spaces and return (opposite hand and foot moving together).
Climb to second rung: high st. arm stretching with knee bending.
Jump to sitting pos. in lowest space: pass through.

High ½ st. (on one foot) arm stretching with knee bending.
Oblique zigzag climbing, turning L. and R. alternately. Return in similar manner, feet first.
(On the tall and narrow ladder two pupils, on the low and wide ladder 4 or 5 pupils may do the exercise at the same time, sitting in contiguous spaces.)
Vertical climbing, turning L. and R. (on tall ladder).
Horizontal climbing, turning L. and R. (on wide ladder).
Oblique zigzag climbing, turning L. and R. Return head first.

Rope Ladders.

(At first, ladders are fastened to the floor, or held by two pupils, later they should swing free while pupils are climbing.)
Climbing with hands and feet, one rung at a time, first L. hand and R. foot leading, then R. hand and L. foot.
Climbing with hands and feet, each hand and foot skipping one rung. (Opposite hand and foot move together. Body close to ladders, knees and elbows well sideways.)
Grasping one ladder with each hand as high as possible, start swing, dismount on backw., then on forw. swing.
Start swing, spring to bent arm hanging pos., dismount on backw. and forw. swing.
Climbing: 2 pupils on each ladder, turning toes in.
Start swing, spring to bent arm hanging pos., raise legs and dismount immediately (swing jump).
Inverted hanging pos. without and with swing, using 2 ladders.
Backw. circle between 2 ladders.

Vaulting Box.

Free front rest.
Mount to kneeling pos., step up to standing pos., dismount forw.
Mount to prone falling pos., face dismount L. and R.
Mount to kneeling pos., step on box with L. foot and vault L. with 90° R. turn. Same on other side.
Mount to side falling pos., dismount forw.
Low face vault L. and R., touching with one foot.
Low side vault L. and R., stepping on box with R. and L. foot respectively.
Vault to kneeling pos., dismount forw.
Squat mount to standing pos., dismount forw.
½ squat ½ straddle mount L. and R. (over ends of box), rising dismount.
Face vault L. and R. (clear).
Knee vault.
Side vault L. and R. (clear).
Squat mount (to momentary pos. with bent knees), rising dismount.
½ squat ½ straddle vault L. and R. (over ends of box).
Back vault L. and R.
Squat vault.
Oblique vault from L. and R. foot.
Side vault L. and R. with 90° turn R. and L. respectively.
Vault to kneeling pos., spring up to standing pos., ordinary or rising dismount.
Face vault L. and R. with 90°-180° R. and L. turn respectively.
Back vault L. and R. with 90°-180° L. and R. turn respectively.

Side Horse (with Pommels).

Front rest, dismount backw.
Free front rest.
Mount to kneeling pos., step with L. foot and vault L. with 90° turn to R. Same on other side.
Preparation for side vault: spring (from both feet) and swing legs to L. and R.
Mount to kneeling pos., step up to standing pos., dismount forw.
Side vault L., stepping with L. foot on end of horse. Same on other side.
Vault to kneeling pos., dismount forw.
½ squat ½ straddle mount, rising dismount (over ends of horse).
Low side vault L. and R. over ends.
½ knee ½ straddle vault L. and R. over ends.
Squat mount, dismount forw.
½ squat ½ straddle vault L. and R. over ends.
Knee vault.
Side vault L. and R.
Low face vault L. and R. over ends.
Squat vault.
Face vault L. and R. (hands either on pommels or preferably on ends of horse, body clearing the pommels in the vault).
Back vault L. and R.
Side vault L. and R. with 90°-180° turn R. and L. respectively.
Face vault L. and R. with 90°-180° turn R. and L. respectively.
Back vault L. and R. with 90°-180° turn L. and R. respectively.
Squat vault with 90° turn L. and R.

Long Horse.

Mount to riding pos., face (vault) dismount L. and R.
Mount to riding pos., back (vault) dismount L. and R.
Mount to oblique back rest, dismount sidew.
Oblique vault from L. and R. foot.
Back vault mount L. and R. to riding pos., back (vault) dismount.
Oblique vault from L. and R. foot, with 90° inside turn(facing horse, with both hands on it, in the landing).
Back vault L. and R.
Oblique vault from L. and R. foot with 180° inside turn (facing near end of horse and keeping one hand on horse in the landing).
Back vault L. and R. with 90°-180° inside turn.

Buck.

Free front rest. Same with leg flinging sidew.
Preparation for side vault: spring, swing legs L. and R.
½ knee ½ straddle vault L. and R. (with assistance at first).
Straddle vault.
Mount to kneeling pos., step up to standing pos., dismount forw.
Low side vault L. and R.
½ squat ½ straddle mount L. and R., dismount immediately with a moderate spring from supporting foot.
Vault to kneeling pos., dismount forw.
Low face vault L. and R.
Straddle vault for distance on far side.

Knee vault.
½ squat ½ straddle vault L. and R.
Back vault L. and R.
Squat mount, dismount forw. (try rising dismount).
Straddle vault with 90°-180° turn L. and R.
Squat vault.
Side straddle vault L. and R.
Rear straddle vault, turning L. and R.

Parallel Bars.

Suspension exercises, mounts, vaults, etc.

Fall hanging pos.: arm bending.
Fall hanging pos.: hand traveling backw. between bars (feet on floor).
Fall hanging pos.: bent arm hand traveling forw. between bars (feet on floor).
From side of bars: run, mount to side sitting pos. L. and R., side dismount.
From end of bars: run, spring, grasping ends of bars, swing forw., then backw. and dismount.
Run, mount to riding rest (hips and knees flexed at first, later extended), swing backw. between bars and dismount.
Run, mount to riding rest, raise R. leg forw. and dismount over L. bar with 180° L. turn (keeping L. hand on bar). Same on other side.
From side of bars: run, mount to L. side sitting pos., turn 90° R. to momentary back rest and dismount forw. Same on other side.
Run, mount to L. side sitting pos., turn 90° L. to front rest, hands on other bar, dismount backw. Same on other side.
Run, mount to L. side sitting pos., turn 90° L. to front rest, hands on other bar, swing R. leg between bars; on return swing dismount backw. with 90° R. turn. Same on other side.
From end of bars: run, spring and swing (straight) arms inside ends of bars (grasping some distance in on bars) swing forw. to cross riding (rest) pos., swing one leg forw. with 90° turn to opposite side to momentary back rest on one bar (both hands on this bar) and dismount forw. Same on other side.
Run, spring, etc., swing forw. and mount at once to back rest on one bar; dismount forw. Same on other side.
Run, etc., back vault L. and R.
Run, mount to oblique back rest on one bar (one hand on each bar); dismount sidew. Same on other side.
Run, mount to oblique back rest on L. bar, 135° R. turn to front rest, dismount backw. Same on other side.
Run, mount to riding pos., face (vault) dismount L. and R.
Run, back vault L. and R. with 90°-180° outside turn.
Run, mount to riding pos., back (vault) dismount L. and R.
Run, back vault L. and R. with 90°-180° inside turn.
Run, mount to back rest on one bar, drop back, raise legs and roll over backw. to standing pos. at side of bars (with assistance).

High Jumps.

Running jump from L. and R. foot, land facing forw.
Running jump from both feet, land facing forw.
Running jump from L. foot, land with 90° L. turn.

Running jump from R. foot, land with 90° R. turn.
Running jump from both feet, land with 90° L. and R. turn.
Running jump from L. foot, land with 90° R. turn.
Running jump from R. foot, land with 90° L. turn.
Running jump from both feet with side-flinging of arms.
Running jump from L. foot, land with 180° L. turn.
Running jump from R. foot, land with 180° R. turn.
Running jump from both feet, land with 180° L. and R. turn.
Running jump from L. foot, land on R. foot and keep on running (hurdle). Same on other side.
Similar jumps using springboard or inclined plane placed on low boom.
Standing high jump forw.
Standing high jump L. and R. (side to the bar or rope).

Broad Jumps.

Standing hop from L. and R. foot.
Standing step from L. and R. foot.
Standing jump from L. and R. foot.
Standing broad jump.
Standing 2 hops from L. and R. foot.
Standing 2 steps from L. and R. foot.
Standing hop, step from L. and R. foot.
Standing step, hop from L. and R. foot.
Standing hop, jump from L. and R. foot.
Standing step, jump from L. and R. foot.
2 standing broad jumps.
Standing hop, step and jump.
3 standing broad jumps.

(2) Apparatus Work for Men.

Horizontal Ladder.

(All exercises on this apparatus are done with straight arms when not otherwise specified.)

Travel forw., hands on outside of ladder.
Travel backw., hands on outside of ladder.
Travel forw., on rungs, one at a time, first L. hand leading, then R. hand.
Travel backw., on rungs, one at a time, first L. hand leading, then R. hand.
Travel sidew. on outside, L. hand leading, then R. hand.
Hanging pos.: alt. knee upw. bending.
Hanging pos.: arm bending 2-3 times.
Short jumps forw., hands on outside.
Short jumps backw., hands on outside.
Rotary traveling forw., on rungs, skipping one (swing and ½ turn each step).
Travel forw., on rungs, skipping one (without swing or turn).
Travel sidew., on outside, with swing and alt. arm bending, L. leading, then R.
Hanging pos.: knee upw. bending.
Hanging pos.: arm bending 3-4 times.
Travel forw., with bent arms, hands on outside.
Travel backw., with bent arms, hands on outside.

Rotary traveling backw. on rungs, skipping one (with swing and ½ turn each step).
Travel backw. on rungs, skipping one (without swing or turn).
Travel sidew. on rungs, L. leading (without swing or turn).
Travel sidew. on rungs, R. leading (without swing or turn).
Travel forw. on rungs, one at a time, bent arms.
Jump forw. from end of ladder, shoot forw. and dismount (swing jump).
Hanging pos.: alt. knee upw. bending and stretching forw.
Short jumps forw., bent arms, hands on outside.
Short jumps backw., bent arms, hands on outside.
Travel forw., L. knee up, hands on outside.
Travel backw., R. knee up, hands on outside.
Travel backw. on rungs, one at a time, bent arms.
Rotary traveling forw. on rungs, skipping two (with swing and ½ turn each step).
Travel sidew., on outside, bent arms, L. leading, then R.
Hanging pos.: knee upw. bending with alt. twisting.
Jump forw. from end of ladder, shoot forw., catch and dismount.
Jump forw. on rungs, one at a time.
Jump backw. on rungs, one at a time.
Travel forw., hands on outside, arms bent, R. leg raised.
Travel backw., hands on outside, arms bent, L. leg raised.
Short jumps sidew., hands on outside, L. leading, then R.
Travel sidew. on rungs, bent arms, L. leading, then R.
Jump forw., shoot forw., catch and dismount with ¼ L. and R. turn.
Jump forw., hands alternatingly on rungs and on outside.
Jump backw., hands alternatingly on rungs and on outside.
Travel forw., bent arms, hands on outside, with alt. knee upw. bending.
Travel backw., bent arms, hands on outside, with knees drawn up.
Short jumps sidew., bent arms, hands on outside, L. leading, then R.
Travel sidew. on rungs, hands double distance apart, L. leading, then R.
Start swing, jump backw., catch and dismount.

Suspended Parallels.

(All exercises on this apparatus are done with straight arms when not otherwise specified.)

Travel forw., one hand on each bar.
Travel backw., one hand on each bar.
Travel sidew., on one bar, with swing from waist, L. leading, then R.
Hanging pos:. alt. knee upw. bending.
Hanging pos.: arm bending 2-3 times.
Travel sidew., on one bar, without swing, L. leading, then R.
Short jumps forw., one hand on each bar.
Short jumps backw., one hand on each bar.
Travel sidew., on one bar, with alt. arm bending, L. leading, then R.
Jump forw., between bars, hands outside, pull up, shoot forw. and dismount (swing jump).
Hanging pos.: knee upw. bending.
Hanging pos.: arm bending 3-4 times.
Travel forw., bent arms, one hand on each bar.
Travel backw., bent arms, one hand on each bar.
Rotary traveling forw., on one bar (one hand inside, the other outside, with swing and ½ turn each step).

Rotary traveling backw., on one bar (one hand inside, the other outside, with swing and ½ turn each step).
Travel sidew., on one bar bent arms, L. leading, then R.
Jump forw., between bars, shoot forw., catch and dismount.
Hanging pos.: alt. knee upw. bending and stretching.
Hanging pos.: arm bending 4-5 times.
Short jumps forw., bent arms, one hand on each bar.
Short jumps backw., bent arms, one hand on each bar.
Travel forw., L. knee up, one hand on each bar.
Travel backw., R. knee up, one hand on each bar.
Rotary traveling on one bar, turning L. 180° (both hands same grasp).
Rotary traveling on one bar, turning R. 180° (both hands same grasp).
Jump, start swing, dismount on next backw. swing, hands outside or inside.
Hanging pos.: knee upw. bending with alt. twisting.
At ends of bars: pull up, with knees bent, to inverted hanging pos.
Travel forw. on one bar, bent arms, head on L. side, then on R. side.
Short jumps sidew. on one bar (straight arms), L. leading, then R.
Travel forw., one hand on each bar, bent arms, R. leg raised.
Travel backw., one hand on each bar, bent arms, L. leg raised.
Rotary traveling forw. on L. and R. bars alternatingly, combined grasp.
Jump forw. between bars, shoot forw., catch and dismount with ¼ L. and R. turn.
At ends of bars: pull up, with straight knees, to inverted hanging pos.
Travel backw. on one bar, bent arms, head on L. side, then on R. side.
Travel forw. on both bars, bent arms with alt. knee upw. bending.
Travel backw. on both bars, bent arms, with knees drawn up.
Short jumps sidew., on one bar, bent arms, L. leading, then R.
Rotary traveling backw. on L. and R. bars alternatingly, combined grasp.
Jump, start swing, jump backw., catch and dismount with ¼ L. and R. turn.
At ends of bars: pull up to inverted hanging pos.; ½ circle backw. to floor (body straight).
Travel forw., bent arms, with alt. leg raising.
Travel backw., bent arms, with legs raised.
Long underswing, on return swing mount to upper arm hanging pos. (hands inside).
Rotary traveling on one bar bent arms, turning L. 180° at each step.
Rotary traveling on one bar bent arms, turning R. 180° at each step.
Long swinging jumps forw.
At ends of bars: pull up, raise legs, cut L. hand, then R.
At ends of bars: pull up, raise legs, cut both hands (assistance).
Reverse grasp on one bar, jump across forward to other bar, with overgrasp. ½ L. turn, reverse grasp. Repeat.
As preceding, but starting with overgrasp and jumping backw. to reverse grasp on other bar.

Vertical Ropes.

Standing position between ropes, grasp at height of chin: arm stretching and bending with knee bending and stretching, 6-8 times. Repeat, leaving the floor each time (combined jump and pull-up).
Jump, grasp rope with hands and feet, L. leg in front. Repeat with R. leg in front. (Climbing pos.: arms straight, hips and knees bent.)
Fall hanging pos.: arm bending 6-8 times.
½ backw. circle of body between two ropes, to inverted hanging pos.
Climbing pos.: arm bending and stretching.

Starting 6-8 feet behind the vertical: run, spring from one foot (just before ropes pass the vertical), grasp as high as possible with bent arms. Dismount immediately, or on next backw. or forw. swing.
Climbing on one rope, with hands and feet.
Hanging pos. on two ropes: arm bending 3 times.
Hanging pos. on two ropes, arms bent: alt. knee upw. bending.
Backw. circle of body between two ropes, to floor (quick movement, body straight).
Start 5-8 feet behind the vertical: swing jump.
Climbing on two ropes, with hands and feet.
Hanging pos. on two ropes, arms straight: alt. knee upw. bending and stretching forw.
Prone hanging pos., arm bending.
Horizontal (or oblique) climbing from rope to rope, with hands and feet.
Hanging pos. on two ropes, bent arms: alt. arm stretching sidew.
Hanging pos. on two ropes, straight arms: knee upw. bending and stretching forward.
Vertical climbing on one rope, with hands only.
Inverted hanging pos. on one rope (grasps with hands and legs as in climbing position).
Climb up, retain position on rope without use of hands.
Vertical climbing on two ropes with hands only.
Swing backw., then forw., with backw. circle to floor.

High Horizontal Bar.

Jump from behind bar: short underswing (swing jump).
Jump, start swing, dismount on first backw. swing.
Hanging pos.: arm bending 2-3 times.
Hanging pos.: alt. knee upw. bending 10-12 times.
Jump, start swing, dismount on next forw. swing.
Hanging pos., pull up, throw head back, raise insteps to bar between hands, knees bent.
Hanging pos.: change from wide to narrow grasp 3 times.
Jump, short underswing for distance.
Jump, start swing, dismount on first backw. swing with ¼ L. and R. turn.
Hanging pos.: knee upw. bending, stretching and slow sinking.
Hanging pos.: pull up, raise insteps to bar outside hands; knees straight.
Jump, start swing, dismount on next forw. swing with ¼ L. and R. turn.
Hanging pos.: pass feet between hands to inverted hanging pos.
Hang with reverse grasp, start swing, dismount on first backw. swing.
Short underswing with ¼ L. and R. turn.
Hang, start swing, dismount on first backw. swing with ½ L. and R. turn.
Hang with reverse grasp; change to overgrasp. Repeat twice.
Hang hook L. knee over bar, then R. knee.
Hang start swing, dismount on next forw. swing with ½ L. and R. turn.
Jump from behind or directly under bar, backw. circle to front rest. Return by forw. circle.
Hang with reverse grasp, start swing, dismount on next forw. swing.
Running start: short underswing for height and distance.
Hang, pull up, shoot forw. and dismount.
Hanging pos.: leg raising and parting.
Hang with L. overgrasp, R. reverse grasp; start swing, dismount on first backw. swing.

Hang with R. overgrasp, L. reverse grasp; start swing, dismount on first backw. swing.

Hang, hook L. knee over bar, swing R. leg backw., dismount forw. on return swing. Same on other side.

Hang, backw. circle to front rest, straight knees. Dismount backw.

Running start: short underswing with ¼ L. and R. turn.

Hang, start swing; on first backw. swing reverse grasp with L. hand, dismount on next forw. swing. Repeat, reversing grasp with R. hand.

Hang, pull up, pass feet between hands to inverted hanging pos.; ½ backw. circle to floor (keeping body straight).

Hang, start swing, clap hands on first backw. swing, dismount on next forw. swing.

Hang, hook L. knee over bar outside hand, swing up to riding rest, ½ L. circle L. leg to front rest; forw. circle to floor. Same on other side.

Hang with combined grasp; change grasp 3 times.

Hang, pass feet outside hands to knee hanging pos., swing and dismount by ½ backw. circle to floor (with assistance).

Running start: short underswing with ½ L. and R. turn.

Hang with reverse grasp, start swing; on first backw. swing change to overgrasp, dismount on next forw. swing.

Hang, hook L. knee over bar outside hand, swing up to riding rest, drop back, on next backw. swing hook R. knee and dismount by ½ backw. circle to floor. Same on other side.

Hang, pass feet between hands to inverted hanging pos., pull up to back rest, dismount forw.

Hang, hook L. knee between hands, swing up to riding rest. Drop back and dismount with short underswing. Same on other side.

Hang, circle bar to front rest; dismount by short underswing.

Hang, start swing, on next forw. swing arch back, dismount on next backw. swing.

Hang, pass feet between hands, quick backw. ½ circle to floor (shoot for distance).

Hang, raise toes to bar; then quickly straighten out and press down with (straight) arms. Repeat with swing (the "kip").

Start swing; on next forw. swing reverse grasp of L. hand; dismount on next backward swing with ½ R. turn. Same on other side.

Start swing; L. knee upstart (outside hand) to riding rest: ½ L. circle R. leg to back rest; backw. circle to floor. Same on other side.

Hang, hook L. knee between hands, swing up to riding rest; drop back with L. heel to bar, knee straight; pass R. foot between hands, on return swing shoot over bar to floor. Same on other side.

Backw. circle to front rest; long underswing with back arched, raise legs and "kip" to front rest; forw. circle to floor.

Easy swing, pass feet between hands to momentary inverted pos., quick pull-up to back rest; ½ L. turn and dismount with short underswing. Repeat, turning R. from back rest.

With L. overgrasp, R. reverse grasp start swing, on next forw. swing ½ L. turn, dismount on next forw. swing. Same on other side.

Swing, L. knee upstart (between hands) to riding rest; backw. L. knee circle; drop back and dismount with short underswing. Same on other side.

Backw. circle to front rest; side vault L. and R. to floor.

Start swing; on next forw. swing hook both knees outside hands, on return swing straighten body with arms overhead and ½ backward circle to floor.

Jump from behind bar, backw. circle over bar to floor.

Start swing; on next forw. swing ½ L. turn; dismount on next forw. swing. Same with ½ R. turn at end of forw. swing.

Swing, L. knee upstart (between hands) to riding rest; reverse grasp, forw. knee circle; ½ L. circle of R. leg to back rest; dismount forw. Same on other side.

Backw. circle to front rest; ½ R. circle of L. leg, ½ L. circle of R. leg to back rest; ½ L. turn and dismount with short underswing. Same on other side.

L. knee upstart (outside hand) to front rest; backw. circle to front rest; dismount backw. Same on other side.

With L. reverse grasp, R. overgrasp, start swing, on next backw. swing ½ R. turn, dismount on next backw. swing. Same with L. and R. reversed.

Swing, L. knee upstart, between hands, ½ L. circle of R. leg with ½ L. turn and short underswing dismount. Same on other side.

Start swing, on next swing hook both knees outside hands, upstart to back rest; backw. circle to floor.

Backw. circle to front rest; ½ L. or R. circle of both legs to back rest, drop back with heels to bar; on return swing shoot over bar to floor.

Swing, pass feet between hands to back rest; dismount forw.

Backw. circle to front rest; free backw. circle to floor.

Jump from behind bar, arch strongly, upstart to front rest, with bent arms ("breast up").

Reverse grasp, start swing, on next backw. swing ½ L. turn, dismount on next backw. swing. Same with ½ R. turn at end of backw. swing.

L. knee upstart, outside hand, ½ L. circle of R. leg; backw. knee circle (hock swing) to floor. Same on other side.

From behind bar, free backw. circle to floor.

L. knee upstart, between hands, ½ L. circle R. leg to back rest, reverse grasp, heels to bar, forward circle to sitting position, ½ L. turn, short underswing dismount. Same on other side.

Backw. circle to front rest; drop back with toes to bar, "kip" to front rest, dismount backw.

"Kip," and free backw. circle to floor.

Start swing, on next forw. swing ½ L. turn; on next forw. swing ½ R. turn; dismount on next forw. swing.

Reverse grasp, start swing, on next backw. swing ½ R. turn, on next backw. swing ½ L. turn; dismount on next backw. swing.

Start swing, hook both knees outside hands, swing up to sitting pos., hands between legs, reverse grasp and forw. circle to floor.

Swing, uprise to free front rest, short underswing.

L. overgrasp, R. reverse grasp, "kip" to front rest, L. face vault dismount. Same on other side.

Swing, pass feet between hands, shoot over bar to back rest; backw. knee circle to back rest, drop back, pass feet between hands and dismount with short underswing.

"Kip"; forward circle to front rest, side vault L. or R. to floor.

Swing, L. knee upstart between hands; reverse grasp of L. hand; knee and instep circle; dismount with short underswing. Same on other side.

Swing, uprise to free front rest, free backw. circle, long underswing, pass feet between hands, hook knees, ½ backw. circle to floor.

Swing, L. knee upstart between hands to momentary riding rest, quick ½ R. turn, backw. R. knee circle, drop back, pass R. foot between hands and dismount. Same on other side.

Start swing, on next forw. swing pass feet between hands, ½ backw. circle to back rest (back upstart).

Low Horizontal Bar.

Free front rest.
Preparation for side (flank) vault: swing legs L. and R. twice.
Preparation for squat vault and straddle vault (toes to bar inside and outside of hands).
Reverse grasp: circle forw. to sitting pos. on floor; swing up to standing pos. on far side of bar.
Short underswing, from L. and R. foot.
Front rest; dismount backw. (with ¼ L. and R. turn).
Low side (flank) vault L., touching bar with left foot, and landing with ¼ R. turn. Same on other side.
Squat mount; dismount forw.
Front rest; slow circle forw. to fall hanging pos.; swing up to standing pos.
Short underswing (from both feet).
Mount to back rest, turning L., then R. Dismount forw. without and with turns.
Low side vault L. and R.
With L. overgrasp, R. reverse grasp, (low) face vault L.
With R. overgrasp, L. reverse grasp, (low) face vault R.
From L. foot: backw. circle over bar to front rest; dismount backw.
From R. foot: backw. circle over bar to front rest; dismount backw.
Back rest by L. and R. turn; roll over backw. to standing pos. on near side of bar.
Short underswing from full reach behind bar.
Side (flank) vault L. with ¼ R. turn.
Side (flank) vault R. with ¼ L. turn.
Back vault L. and R.
Backw. circle to front rest; return by forw. circle.
Jump, catch bar, short underswing.
Front rest: short underswing.
With L. side to the bar: oblique vault from R. foot.
With R. side to the bar: oblique vault from L. foot.
Fence vault, L. or R.
Squat vault.
½ squat ½ straddle mount L. and R.
½ L. and R. circle of both legs to back rest; dismount forw.
Jump, hook L. knee outside hand, drop back, swing up, ½ L. circle L. leg to floor. Same on other side.
Jump, catch bar, short underswing with ¼ L. and R. turn.
Side vault L. with ¼ L. turn.
Side vault R. with ¼ R. turn.
Straddle vault.
½ R. circle L. leg, ½ L. circle R. leg to back rest; (with hands on bar) backw. knee circle to floor.
Front rest: backw. circle to front rest; dismount with short underswing.
Hang with heels on bar, between hands; swing and shoot up over bar to floor.
½ R. circle L. leg, ½ L. circle R. leg to back rest; drop back with heels to bar, on return swing shoot up to back rest; dismount forw.
Fence vault, L. or R., for height.
Squat vault with ¼ L. and R. turn.
Combined grasp; face vault L. with ¼ R. turn.
Combined grasp; face vault R. with ¼ L. turn.

Jump, hook L. knee between hands, drop back, swing up, ½ L. circle of R. leg with ¼ L. turn of body to floor. Same on other side.
½ L. circle L. leg to riding rest; backw. L. knee circle; drop back, dismount with short underswing. Same on other side.
Back vault L. with ¼ L. turn.
Back vault R. with ¼ R. turn.
Side vault L. with ½ R. turn.
Side vault R. with ½ L. turn.
Jump to back rest; backw. knee circle, drop back, on return swing shoot over bar to floor.
Free backw. circle to floor (bar at height of chest).
Squat vault with ½ L. and R. turn.
Straddle vault with ¼ L. and R. turn.
Standing pos. with one foot raised to bar (between hands); drop back, raise other leg, "kip" (or begin by swinging L. leg up, then R.).
Back vault L. with ½ L. turn. Same R. with ½ R. turn.
Straddle vault with ½ L. and R. turn.
Jump with insteps to bar between hands, drop back, "kip."
Backw. circle to front rest; ½ R. circle L. leg, reverse grasp, forw. L. knee circle. Same on other side.
Combined grasp, side vault L. with ½ R. turn, quick change of grasp with L. hand and short underswing. Same on other side.
Jump with feet to bar, outside hands, drop back, short underswing.
Run under bar, "kip."
Free backw. circle and short underswing.
Jump, hook both knees outside L. hand; backw. knee circle; dismount forw. Same on other side.
Jump to sitting pos., knees straight; reverse grasp, forw. knee circle to floor.
Front rest: forw. circle to front rest; dismount backw.
½ L. circle of both legs to sitting pos. with L. hand between legs; backw. knee circle; L. hand outside, drop back, short underswing. Same on other side.
Jump with feet to bar outside hands, short underswing with ¼ L. and R. turn.
½ R. circle L. leg to riding rest, drop back, pass R. foot between hands and shoot up over bar to floor. Same on other side.
From full reach: short underswing and "kip."
Grasp bar, drop back, L. knee upstart between hands, reverse grasp with L. hand; knee-and-instep circle forward; dismount forw. with ¼ L. turn. Same on other side.
Front rest, drop back, "kip," side vault L. and R.
Three double knee circles backw., with hands first outside L. leg, then outside R. leg, then legs between hands; drop back, shoot up (clearing bar) to floor.
Combined grasp, L. circle R. leg with ½ L. turn of body to sitting pos., hands between legs; backw. knee circle, then backw. body circle to floor. Same with R. circle of L. leg and ½ R. turn.
L. overgrasp R. reverse grasp, "kip," change grasp R. hand, short underswing. Repeat with R. and L. reversed.
Backw. circle to front rest, drop back, "kip," to front rest, ½ turn to back rest, drop back, pass feet between hands and short underswing.
With narrow grasp: short underswing, raise legs, pass feet outside hands and mount to sitting pos., hands between legs, drop back, pass feet in front of bar and "kip."

Jump to riding rest, L. leg in front (and between hands): L. backw. knee circle, drop back, pass R. foot between hands and mount to sitting pos., ½ L. turn to front rest, forw. circle to front rest; dismount backw. Repeat with R. and L. reversed, and finishing with free backw. circle and short underswing.
Jump with feet to bar (wide apart), grasp and short underswing.

Side Horse (with Pommels).

Squat mount; dismount forw.
Straddle mount; dismount forw.
Free front rest.
½ squat ½ straddle mount L. and R.
Low side (flank) vault L. over L. end of horse (R. hand on pommel, L. hand on horse). Same on other side.
Mount to kneeling pos., dismount forw.
Knee vault.
Squat vault.
Straddle mount; dismount forw. with ½ L. and R. turn.
Squat vault with ¼ L. and R. turn.
½ squat ½ straddle vault L. and R. over ends.
Low face vault L. and R. over ends (one hand on pommel, other on horse).
Straddle vault.
½ squat ½ straddle vault L. and R. over saddle.
Low side vault (flank) L. with ¼ R. turn, over L. end. Repeat with R. and L. reversed.
Back vault L. and R.
Knee vault with ¼ L. and R. turn.
Face vault L. and R. over saddle (preferably with hands on horse).
Jump vault from L. and R. foot.
½ squat ½ straddle vault L. with ¼ R. turn, over saddle. Repeat with R. and L. reversed.
Side (flank) vault L. and R. over saddle (hands on pommels).
Face vault L. to riding pos. on L. end. Face (vault) dismount L. (hands on pommel).
Face vault R. to riding position on R. end. Face (vault) dismount R. (hands on pommel).
Oblique vault from L. foot (R. hand on R. end). Same on other side.
½ squat ½ straddle vault L. with ¼ L. turn, over saddle. Same on other side.
Jump vault from L. foot, with ¼ R. (and L.) turn. Repeat with R. and L. reversed.
Back vault L., with ¼ L. (inside) turn. Same on other side.
Side vault L. with ¼ R. turn.
Side vault R. with ¼ L. turn.
Face vault L. with ¼ R. turn.
Face vault R. with ¼ L. turn.
½ squat ½ straddle vault L. with ½ R. turn, over neck.
½ squat ½ straddle vault R. with ½ L. turn, over croup.
Oblique vault from L. foot (R. hand on horse) with ¼ L. (inside) turn.
Oblique vault from R. foot (L. hand on horse) with ¼ R. (inside) turn.
Back vault L. to riding pos. on L. end of horse. Back (vault) dismount R.
Back vault R. to riding pos. on R. end of horse. Back (vault) dismount L.
Face vault L. with ½ R. turn.

Face vault R. with ½ L. turn.
½ squat ½ straddle vault L. with ½ R. turn, over saddle.
½ squat ½ straddle vault R. with ½ L. turn, over saddle.
Jump vault from L. foot, with ½ R. (and ½ L.) turn.
Jump vault from R. foot, with ½ L. (and ½ R.) turn.
Straddle vault with ½ L. and R. turn.
Side vault L. with ¼ L. turn. Same on other side.
L. hand squat mount; dismount with ¾ L. turn. Same on other side.
Back vault L. with ½ L. (inside) turn. Same on other side.
Front vault. ("Sheep vault". Chest leading, feet last over horse.)
Pike dive.
Oblique vault from L. foot with ½ L. (inside) turn. Same on other side.
½ squat ½ straddle vault L. with ½ L. turn over end. Same on other side.
Oblique vault from L. foot with ½ R. (outside) turn (support with R. hand only).
Oblique vault from R. foot with ½ L. (outside) turn (support with L. hand only).
L. hand straddle mount; dismount with ¼ L. turn. Same on other side.
Front vault with ¼ L. and R. turn.
½ squat ½ straddle vault L with ½ L. turn, over saddle. Same on other side.
One hand side vault L and R
Rear straddle mount, turning L and R.
L. and R. hand squat vault.
High face vault L. and R. (through handstand).
Rear straddle vault, turning L. and R
L and R. hand straddle vault.
High squat vault (through handstand)
One hand side vault L. with ¼ R. turn.
One hand side vault R. with ¼ L. turn.
High straddle vault (through handstand).
Hand spring, slow and quick.

Buck.

Free front rest.
Straddle vault.
½ squat ½ straddle mount L and R.
Knee vault
Low side (flank) vault L. and R.
Squat mount, dismount forw. Repeat with rising dismount.
Straddle vault for distance.
Jump from L. foot to standing pos. on R. foot; dismount forw.
Jump from R foot to standing pos on L foot; dismount forw.
½ knee ½ straddle vault L. and R.
Straddle vault with ¼ L and R. turn.
½ squat ½ straddle vault L. and R.
Squat mount; rising dismount forw. with side-flinging of arms and legs.
Low face vault L. and R.
Jump from L. and R. foot to standing pos. (on both feet); dismount, touching toes in air.
Back vault L. and R.
Straddle vault with ½ L. and R. turn.
Squat vault.
½ squat ½ straddle vault L., with ¼ R. turn.
½ squat ½ straddle vault R., with ¼ L. turn.

Side (flank) vault L. with ¼ R. turn.
Side (flank) vault R. with ¼ L. turn.
Jump (clear) over buck, from L. and R. foot.
Straddle vault for height.
Back vault L. with ¼ L. turn.
Back vault R. with ¼ R. turn.
Squat vault with ¼ L. and R. turn.
½ squat ½ straddle vault L. with ¼ L. turn.
½ squat ½ straddle vault R. with ¼ R. turn.
Oblique vault from L. and R. foot.
Face vault L. with ¼ R. turn.
Face vault R. with ¼ L. turn.
L. hand straddle vault.
R. hand straddle vault.
½ squat ½ straddle vault L. with ½ R. turn.
½ squat ½ straddle vault R. with ½ L. turn.
Side vault L. with ¼ L. turn.
Side vault R. with ¼ R. turn.
Back vault L., with ½ L. turn.
Back vault R., with ½ R. turn.
Oblique vault from L. foot with ¼ L. turn.
Oblique vault from R. foot with ¼ R. turn.
Vault to kneeling pos., spring to standing pos., dismount forward.
Side straddle vault L. and R. (buck lengthwise).
Squat vault with ½ L. and R. turn.
L. hand straddle vault with ¼ L. turn.
R. hand straddle vault with ¼ R. turn.
Jump vault from L. and R. foot.
Face vault L. with ½ R. turn.
Face vault R. with ½ L. turn.
Oblique vault from L. foot with ¼ R. turn (support on R. hand only).
Oblique vault from R. foot with ¼ L. turn (support on L. hand only).
Rear straddle mount, L. or R. (buck lengthwise).
Jump vault from L. foot with ¼ L. turn.
Jump vault from R. foot with ¼ R. turn.
Straddle vault with ¾ L. and R. turn.
Oblique vault from L. foot with ½ L. turn.
Oblique vault from R. foot with ½ R. turn.
L. hand straddle vault with ¼ R. turn.
R. hand straddle vault with ¼ L. turn.
½ squat ½ straddle vault L. with ½ L. turn.
½ squat ½ straddle vault R. with ½ R. turn.
Jump vault from L. foot with ¼ R. turn.
Jump vault from R. foot with ¼ L. turn.
Back vault L. with ½ L. turn.
Back vault R. with ½ R. turn.
Pike dive.
Rear straddle vault, turning L. and R.
Oblique vault from L. foot with ½ R. turn (support on R. hand only).
Oblique vault from R. foot with ½ L. turn (support on L. hand only).
R. hand low side vault L.
L. hand low side vault R.
Jump vault from L. foot with ½ L. turn.
Jump vault from R. foot with ½ R. turn.
Front vault ("Sheep" vault. Body arched; chest leading, feet last over buck).

L. hand straddle vault with ½ L. (and R.) turn.
R. hand straddle vault with ½ R. (and L.) turn.
Side vault L. with ¼ L. turn.
Side vault R. with ¼ R. turn.
Squat vault with ¼ L. and R. turn.
Rear straddle vault L. with ¼ L. turn.
Rear straddle vault R. with ¼ R. turn.
Front vault with ¼ L. turn.
Front vault with ¼ R. turn.
R. hand side vault L. with ¼ R. turn.
L. hand side vault R. with ¼ L. turn.
Rear squat vault, turning L. and R.
Cross-legged straddle vault, L. leg in front (hips turned, but shoulders square to the front).
Cross-legged straddle vault, R. leg in front (hips turned, but shoulders square to the front).
Rear squat vault L. with ¼ L. turn.
Rear squat vault R. with ¼ R. turn.
Rear straddle vault L. with ½ L. turn.
Rear straddle vault R. with ½ R. turn.
High face vault L. and R. (through handstand).
Straddle vault with full L. and R. turn.
High squat vault (through handstand).
High straddle vault (through handstand).
Hand spring, slow or quick.

Parallel Bars.

(Unless otherwise specified the exercises are done with a running start, from end of bars, mounting well in toward middle.)

Back rest on L. bar; dismount forw. Same on R. bar.
Riding pos.; face (vault) dismount L. and R.
Oblique back rest on L. bar; back (vault) dismount L. Same on R. bar.
Riding pos.; swing forw. between bars to back (vault) dismount L. and R.
Back vault L. and R.
Back rest on L. bar; dismount forw. with ½ L. turn. Same on other side.
Riding pos.; swing backw. between bars to face (vault) dismount L. and R.
Oblique back rest on L. bar; back (vault) dismount L. with ¼ R. turn.
Oblique back rest on R. bar; back (vault) dismount R. with ¼ L. turn.
Oblique back rest on L. bar; turn R. to cross riding pos. Face (vault) dismount L.
Oblique back rest on R. bar; turn L. to cross riding pos. Face (vault) dismount R.
Travel forw. through riding pos. on both bars.
At ends of bars: L. circle L. leg to floor, then R. circle R. leg to floor.
Back vault L. with ¼ R. turn.
Back vault R. with ¼ L. turn.
Oblique back rest on L. bar; back (vault) dismount R. over both bars.
Oblique back rest on R. bar; back (vault) dismount L. over both bars.
Oblique back rest on L. bar; turn R. to front rest, hands on R. bar; dismount backw. Same on other side.
Swing forw., then backw., to face (vault) dismount L. and R.
Travel backw. through riding pos. on both bars.
At ends of bars: R. circle L. leg over L. bar to floor, then L. circle R. leg over R. bar to floor.

Back vault L. with ½ R. turn.
Back vault R. with ½ L. turn.
½ L. circle R. leg over L. bar, ½ R. circle L. leg over L. bar, with ¼ R. turn of body to front rest. Dismount backw. Same on other side.
¾ L. circle R. leg over L. bar (cut L. hand) with ½ R. circle L. leg to oblique front rest on L. bar, face dismount L. Same on other side.
Travel forw. through oblique back rest on L. and R. bars successively, swinging forw. between bars each time.
At ends of bars: L. circle of both legs over L. bar to floor, then R. circle of both legs over R. bar to floor.
Back vault L. with ½ L. turn (pivoting on L. hand).
Back vault R. with ½ R. turn (pivoting on R. hand).
Back rest on L. bar, roll over backw. to floor. Same on other bar.
Travel forw. through cross-legged riding pos. on both bars ("grapevine").
At ends of bars: L. circle R. leg over L. bar to floor, then R. circle L. leg over R. bar to floor.
Oblique front rest on L. bar; swing forw. between bars to back (vault) dismount R.
Oblique front rest on R. bar; swing forw. between bars to back (vault) dismount L.
Upper arm rest, raise legs, swing backw. and dismount between bars.
Upper arm rest, raise legs and mount to oblique back rest on L. bar, back (vault) dismount L. with ¼ R. turn. Same on other side.
½ L. circle R. leg (with ½ R. circle L. leg) over L. bar to face (vault) dismount L. (cut L. hand).
½ R. circle L. leg (with ½ R. circle L. leg) over R. bar to face (vault) dismount R. (cut R. hand).
Upper arm rest, raise legs, mount to riding pos. Face vault dismount R. and L.
Face vault L. and R. (without preliminary forw. swing).
Swing forw.; L. circle R. leg over L. bar (cut L. hand), swing forw. between bars to back (vault) dismount R. with ½ L. turn. Same on other side.
Riding pos., shoulder stand: roll over forw. to upper arm rest, swing backw. and dismount between bars.
Upper arm rest, raise legs, upstart ("kip"), swing backw. and face (vault) dismount R. or L.
At ends of bars: R. circle L. leg over both bars with simultaneous R. circle R. leg over R. bar to floor. Same on other side.
Swing forw. and backw. (increasing momentum), on next forw. swing side vault L. over R. bar (body straight). Same on other side.
Swing forw., L. circle R. leg over L. bar (cut L. hand) and face (vault) dismount R. over R. bar.
Swing forw., R. circle L. leg over R. bar (cut L. hand) and face (vault) dismount L. over L. bar.
Swing forw., then backw. to shoulder stand, ½ circle straight sidew. to floor. Same on other side.
½ L. circle R. leg over L. bar, R. circle L. leg over L. bar, with ¾ R. turn to back rest. Roll over backw. to floor. Same on other side.
Upper arm rest, raise legs, on backw. swing uprise to cross rest and immediate back (vault) dismount L. or R.
At ends: R. circle R. leg over both bars with simultaneous R. circle L. leg over L. bar to floor. Same on other side.
Side vault L. and R. (on first forw. swing).

Swing forw., L. circle L. leg over L. bar (cut L. hand), swing forw., R. circle R. leg over R. bar (cut R. hand), swing forw., back vault dismount L. or R.

Upper arm hang; start swing, on second forw. swing ½ backw. circle to shoulder stand; ½ backw. circle to back (vault) dismount R. or L.

Swing forw., then backw., then drop to upper arm rest and "kip," immediate face (vault) dismount L. or R.

At ends: L. circle L. leg over L. bar with simultaneous R. circle R. leg over R. bar to floor (cut both hands simultaneously).

At ends: R. circle L. leg over L. bar with simultaneous L. circle R. leg over R. bar to floor (cut both hands simultaneously).

From side of bars: side vault L. with ¼ R. turn and L. hand on other bar, swing forw. between bars and back vault dismount L. with ½ L. turn. Same on other side.

From side of bars: combined grasp on near bar, drop back and shoot up between bars with ½ R. turn of body to cross riding rest, hands in front; swing forw. between bars and backw. shoulder roll. Dismount between bars.

From side of bars: overgrasp on far bar with arms under near bar: backw. circle to front rest, hands on far bar; dismount backw.

Swing forw., then backw., to handstand; swing forw. to back vault dismount R. or L.

From far end of bars: upper arm rest (facing mid-bars); backw. shoulder roll to floor.

From far end of bars: riding pos. facing ends: forw. shoulder spring to floor.

From far end of bars: grasp ends, drop back with legs raised, "kip"; dismount backw.

From near end of bars: back vault L. over both bars.

From near end of bars: back vault R. over both bars.

L. circle R. leg over L. bar (cut L. hand), L. circle R. leg over R. bar (cut R. hand) and back (vault) dismount L. over L. bar. Same on other side.

Mount to riding rest, facing near end of bars: drop to upper arm rest with long underswing between bars, two backw. shoulder rolls to shoulder stand, "kip," face (vault) dismount with turn.

Swing forw., then backw., to handstand; drop to shoulder stand; forw. roll to riding rest on one bar, back (vault) dismount over other bar.

Upper arm rest, "kip," to oblique back rest on L. bar; ¼ R. turn to front rest; side vault L. over both bars to floor. Same on other side.

From far end of bars (facing in): underswing, "kip," shoulder stand; backw. shoulder roll to floor.

Upper arm rest: start swing, on backw. swing ½ (forw.) circle to shoulder stand, forw. roll, on backw. swing uprise and back (vault) dismount L. (or R.).

Swing forw. and backw., on next forw. swing drop back with legs raised, "kip," on next forw. swing cut both hands and back vault dismount L. (or R.).

At ends of bars: R. circle both legs over both bars to floor; L. circle both legs over both bars to floor.

Swing forw., L. circle R. leg over L. bar (cut L. hand), followed immediately by R. circle L. leg over L. and R. bars (cut first L., then R. hand), then L. circle R. leg over R. bar to back (vault) dismount L. Repeat with R. and L. reversed.

At near end: R. circle L. leg over L. bar with simultaneous L. circle R. leg over R. bar, swing backw. to shoulder stand and forw. shoulder roll to riding pos.; forw. circle between bars (resting on thighs) back to riding pos.; forw. shoulder roll (arms straight sideways) over far end to floor.

Handstand, walk forw., drop down to shoulder stand, forw. shoulder roll, on backw. swing uprise to riding pos.; back vault dismount.

Swing forw., then backw., R. circle both legs over both bars with ¼ R. turn to floor. Same on other side.

Upper arm rest, start swing, on backw. swing uprise and shoulder stand, "kip" and shoulder stand, backw. shoulder roll, "kip" and face dismount R. or L.

High Jumps.

(Height of bar about 3 feet.)

Run, jump from L. foot, land facing forw.
Run, jump from R. foot, land facing forw.
Run, jump from L. foot, land with ¼ L. turn.
Run, jump from R. foot, land with ¼ R. turn.
Run, jump from L. foot, land with ¼ R. turn.
Run, jump from R. foot, land with ¼ L. turn.
Run, jump from both feet, land facing forw.
Run, jump from both feet, land with ¼ L. turn.
Run, jump from both feet, land with ¼ R. turn.
Run, jump from both feet, with side-flinging of arms and legs.
Run, jump from L. foot, land on R. foot.
Run, jump from R. foot, land on L. foot.
Run, jump from L. foot, land on L. foot.
Run, jump from R. foot, land on R. foot.
Run, jump from L. foot, land on both feet with ½ L. turn.
Run, jump from R. foot, land on both feet with ½ R. turn.
Run, jump from L. foot, land on both feet with ½ R. turn.
Run, jump from R. foot, land on both feet with ½ L. turn.
Run, jump from both feet, land on both feet with ½ L. turn.
Run, jump from both feet, land on both feet with ½ R. turn.
Standing high jump to L. (L. side to the bar).
Standing high jump to R. (R. side to the bar).
Oblique running high jump, from L. foot.
Oblique running high jump, from R. foot.
Run, jump from L. foot, land on L. foot with ½ L. turn.
Run, jump from R. foot, land on R. foot with ½ R. turn.
Run, jump from L. foot, land on both feet with ½ L. turn and backw. roll.
Run, jump from R. foot, land on both feet with ½ R. turn and backw. roll.
Run, jump from both feet with side-flinging of arms and legs and ½ L. turn.
Run, jump from both feet with side-flinging of arms and legs and ½ R. turn.
Standing high jump forw.
Standing high jump forw. with side-flinging of arms and legs.
Run, hurdle from L. foot.
Run, hurdle from R. foot.
Pike dive.
Competitive running high jump, any style.

Most of the above jumps may also be done from a springboard.

Broad Jumps.

One standing hop forw. from L. and R. foot.
One standing step forw. from L. and R. foot.
One standing jump forw. from L. and R. foot.
One standing broad jump.
One standing side jump, L. and R.
One standing jump backw.
Two standing hops forw. from L. and R. foot.
Two standing steps forw. from L. and R. foot.
One standing hop and step, starting from L. and R. foot.
One standing step and hop, starting from L. and R. foot.
One standing hop and jump, starting from L. and R. foot.
One standing step and jump, starting from L. and R. foot.
Two standing broad jumps.
Two standing side jumps L. and R.
Two standing hops backw., from L. and R. foot.
Standing hop, step and jump, starting from L. and R. foot.
Three standing hops forw., from L. and R. foot.
Three standing broad jumps.
Two standing jumps backward.
One running hop, from L. and R. foot.
One running step, from L. and R. foot.
Three standing jumps to L. and R.
Two running hops, from L. and R. foot.
Two running steps, from L. and R. foot.
Running broad jump from L. and R. foot. (Do not try for great distance, unless landing on spring mattress.)
Running hop and step, from L. and R. foot.
Running step and jump, from L. and R foot.
Running hop, step and jump from L. and R. foot.
Running broad jump with full L. turn, from L. foot.
Running broad jump with full R. turn, from R. foot.

Tumbling.

Forw. roll, hands on mat.
Forw. roll, hands on insteps.
Forw. roll, forearms and elbows on mat.
Backw. roll.
Forw. roll with one hand on hip.
Forw. roll with both hands on hips.
Head stand, roll over forw.
Forw. roll, followed by backw. roll.
Handstand (with assistance at first).
Cartwheel L. and R.
Running dive from one foot.
Backw. roll to head stand.
Handstand, walk forw.
Running dive from both feet.
Two cartwheels L. and R.
From lying position: raise legs and "snap" up to standing pos., using hands behind head.
Same as preceding, with hands on knees.
Handspring over rolled up mat.

Hand-and-head spring from rolled up mat.
Combined forw. and backw. roll by two pupils, grasping each other's ankles.
Running dive from one foot, or both feet, for distance.
From lying pos.: "snap" up to standing pos., arms folded.
Handspring from knees of pupil lying on his back.
Handstand, drop to head stand, roll over and "snap" up to standing pos.
Running dive, fall back and snap up to standing pos.
Cartwheel and handspring.
Forw. somersault (with belt).
Backw. handspring (with belt).
Backw. somersault (with belt).

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